

THE ENGLISH REVOLUTION IN
SOCIAL MEDICINE, 1889-1911

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ABSTRACT

The dissertation examines the development of preventive medicine between 1889-1911. It discusses the rise of expertise in prevention during this period and the consolidation of experts into a professional body. In this context the career histories of medical officers of health in London have been analysed to provide a basis for insight into the social structure of the profession. The prosopography of metropolitan officers demonstrated a broad spectrum of recruitment from the medical profession and the way in which patterns of recruitment changed over time. The level of specialisation in preventive medicine has been examined through a history of the development of the Diploma in Public Health. The courses and qualifying examinations undertaken by medical officers of health revealed the way in which training was linked to professionalisation through occupational monopoly. The association representing the interests of medical officers of health, their own Society, was investigated through its recorded minutes of Council and Committees from the year it was first amalgamated into a national body, 1889, up to the date of the National Insurance Act in 1911. Here the aims and goals of the profession were set against their achievements and failures with regard to the new patterns of health care provision emerging during this period. This context of achievement and failure has been contrasted with an examination of the 'preventive ideal', as it was generated from within the community of preventive medical associations, of which the Society of Medical Officers of Health was one member. The interaction and exchange of ideas between these associations, including that with the Society, was traced through their journals and publications. Finally, the theoretical and practical knowledge which supported the development of technical expertise in preventive medicine is discussed through an analysis of hygiene text-books, available as instruction texts for diploma courses.

Bearing in mind that it has been suggested by some historians that a revolution in social medicine took place in England during the 19th-Century, the thesis argues that this proposition needs to be re-examined historically. It suggests that an assumption that a revolution began and ended in the conventional realms of central and local politics would be unfounded. Alternatively, it suggests that the process of transition took place in the realm of the politics of expertise, linked to the rise of professionalism and changes in conceptual technology. It is hoped that this re-examination will allow the reader to re-address the question what is social medicine and when or if a revolution, even a typically English one, occurred.

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In his famous essay of 1947, George Rosen asserted that, historically, the appearance of the concept of social medicine had occurred in response to problems of disease created by industrialism.¹ He cited the origin of the concept in the mind of Rudolf Virchow (1821-1902) who, when faced with an epidemic of typhus in Upper Silesia during 1847, reported that the outbreak of the disease was due to complex social and economic factors.²

Virchow believed that the disease in Silesia was not the abdominal typhus which was endemic in Berlin and Paris but was a British variety, a form associated with famine and war.³ His epidemiological analysis of the outbreak went further than simply pointing to malnutrition as the cause. In his essay on the treatment of the epidemic Virchow outlined, for the first time, his sociological model of epidemiology. Here he argued that full democracy, education, liberty, national autonomy, communal self-government, new roads, improvements in agriculture, industry, co-operatives etc. would prevent the circumstances under which unfavourable climatic conditions were able to stimulate the epidemic. A free, educated, prosperous population would not, he believed, be so easily overwhelmed by the disease.⁴

Virchow's concept of public health was socio-political rather than technical and a feature of his politics of medical reform.⁵ He believed that as politics became more involved with social change then medicine would only progress by being part of this transition. The right of every individual citizen to a healthful existence could only be achieved, he thought, through the intervention of the state. Virchow's suspicion of bureaucracy, however, encouraged him to always stress that community intervention should be as decentralized as possible. Public health was, he believed, concerned with the housing of the individual, work for the unemployed, treatment for the indigent, insurance against invalidity, health of migrants, unhealthy barracks, large drainage works and school hygiene.⁶ It included, also, prison reform and the replacement of the penitentiary system with psychiatric education of criminals.⁷

George Rosen has suggested that this socio-economic model of prophylaxis constituted an ideal which subsequent systems of health care throughout Europe only partially realised during the 19th-century.⁸ Rosen also admits, however, that the emergence of social medicine in revolutionary Germany in 1848 was only one moment . in the history of disease control amongst communities which began with the development of systems of medical police. Johann Peter Frank (1745-1821) defined this system in 1779, which coincided with the rise of cameralism in Germany and the need for the mercantile

state to be provided with a sufficient strength of physical subjects to defend it in war.⁹ By comparison, the growth of the medical police concept in England was slow. Roy Macleod has accounted for this with the lack of 'state-craft' in England which delayed consideration of the issue until two centuries after William Petty had established his political arithmetic.¹⁰ It was not until Andrew Duncan (1744-1828), Professor of the Institute of Medicine in Edinburgh, reflected upon J.P. Frank's work in his lectures on jurisprudence in 1795 that consideration of the relationship between the state and health began in earnest.¹¹

The question of health care provision by the state, however, soon became absorbed into the Benthamite movement of social reform which linked sickness and poverty as reciprocally determined.¹² The rise of infant mortality from 1815 led William Farr (1807-1883) to conclude that it was beyond doubt coterminous with an increase in density.¹³ The rise in mortality together with the recurring epidemics of yellow fever, typhoid and typhus stimulated a generation of English sanitarians into attacking the issue of controlling the environment of disease propagation.¹⁴ A generation which, as Margaret Pelling has pointed out, used the invasion of cholera as a major tool of propaganda to gain statutory regulation of the underlying problem which the 'official orthodoxy' believed was the correlation of fever with filth.¹⁵

The issue of sanitation was however, R.H. Shryock reminds us, only one feature of a protest for general social and economic change throughout Europe.¹⁶ Chadwick, Southwood-Smith and their associates led a great social reform in creating a sanitary programme. For example:

Men did not demand sanitary reform simply in order to improve factories- rather did they urge factory legislation as part of a far wider comprehensive programme of health reform.¹⁷

Sanitary science was simply an effective application of statistically-based hygiene to achieve that end which, in the view of some, was the closest English equivalent to the Virchow model of social medicine.¹⁸

The dominance of medicine in public health began with the appointment of John Simon (1816-1904) to the General Board of Health in 1854 and the medical department of the Privy Council created during 1858.¹⁹ A

"New Era" in state medicine was subsequently ushered in, according to Simon's biographer, Royston Lambert.²⁰ This era was most ideally represented in the Essays on State Medicine, written by Henry Rumsey (1809-1876) in 1856.

Rumsey's six essays outlined a theoretical system of state medicine and health police which was far more comprehensive than any that existed at that time.²¹

His sanitary code included the regulation of location and construction of towns, complete systems of water supply, drainage and sewage removal, sale of food and drugs, trades and factory pollution, safety of locomotion and the burial of the dead. Rumsey's concept was based on central state organisation but he had clear views how this should

be translated into local administrative machinery. A national, uniform system of division of labour between various sanitary agents should administer the localities, he believed, and each class of officer should be specifically trained in the medical, technical and scientific education which their separate functions required.²² All sanitary regulation should be based, according to Rumsey, on state investigation into the statistics of life and health.²³

Rumsey and Simon were elite members of the medical profession during the mid-Victorian period and both played a unique role in the medicalization of public health throughout this time. They possessed a set of ideal aims however which were never fully realised. Despite Simon's pioneering work at the Privy Council his achievements were always limited by the financial constraints of the Treasury. The situation was compounded when the public health administration was linked at central government level with that of the poor law through the creation of the Local Government Board in 1872.²⁴ Simon's resignation from the Board in 1876 has been identified as the beginning of the "eclipse of state medicine" and the years which followed as simply an era of "frustration".²⁵

The frustration of state medicine in central government that led to its eclipse in Whitehall was not equalled however by an elimination of preventive medicine in the administration of local districts. The establishment of the L.G.B. coincided with the end of the "heroic age" of state medicine and the death of a number of its heroes.²⁶

State medicine had been idealized as "that department of medical science which deals with subjects upon which a medical man may be consulted by the executive or legislative government of the country."²⁷ It was replaced by a new set of professional aims, not amongst those doctors who had joined the civil service in Whitehall, but amongst those who had been recruited to administer the public health system in the local districts. At this level it was possible to witness:

the development of institutional forms,
the development of scientifically based
traditions of experimental and preventive
medicine, and the formation of distinct
professional goals and academic status.²⁸

If the first two periods in the history of the public health movement could be called one of sanitary reform, linked with the names of Chadwick and Southwood-Smith, and one of state medicine, associated with Simon and Rumsey, then the third period could use the term preventive medicine for its definitive title. The era of preventive medicine however could not genuinely be identified with any one or two individuals. It was, on the contrary, a non-heroic age associated with an occupational group and a social process: that process whereby an occupational group attains the social status of a profession, i.e. professionalisation.

There are two terms here therefore which must be spelt out historically. To deal firstly with 'preventive medicine'. Contemporary practitioners of prevention in the late 19th-century wrote extensive volumes during the early years of the twentieth on the historical rise of preventive medicine from antiquity to modernity. The emphasis which authors, such as

Arthur Newsholme (1857-1943) and George Newman (1870-1948) placed on prevention was the result of the professionalisation in which they played a significant role.²⁹ Though prevention dominated contemporary thinking of the period, it has been pointed to by some historians as being of secondary importance, disguising the underlying trend of the disappearance of social medicine.³⁰ Other historians who have examined the achievements of the public health system in improving the "peoples health" have ignored the role of preventive medicine altogether.³¹ The modern rise in population has resulted, in the view of some, primarily from improved nutrition since the time of the agricultural revolution and secondly from the success of environmental hygiene in reducing mortality from infectious diseases.³² This thesis assumes that environmental hygiene was an homogenous system in which pollution of waters, airs and places was greatly reduced through innovative engineering in the urban infrastructure. In this context, explanations of the disease process were irrelevant to the development of efficient systems of sewers and drains, and the scientific revolution in the bio-medical sciences were insignificant, as was the role of clinical medicine, to levels of health.³³ The Chadwick-Southwood-Smith miasmatic orthodoxy may have come and gone but the environmental clean up continued on regardlessly:

Chadwick, in spite of his heresy concerning the nature of infectious disease, outlined very precisely the programme subsequently endorsed by bacteriologists.³⁴

The view that the early years of the sanitary movement were doing the right thing for the wrong reasons, and consequently the advent of bacteriological and biochemical etiology did not change methods of prevention during the later period, is a familiar argument which predates the demographic analysis of health cited above. This is a common theme in earlier accounts of the control of epidemics during the Victorian period.³⁵ The familiar story of the English public health system however sacrifices a degree of historicity, even though in some cases it has done so for the sake of social analysis. It is worth remembering in this context, as George Rosen has pointed out:

Historical facts do not stand isolated in time or space. A realistic consideration of history show us time movements in human affairs. Contradictions appear in human society; clashing interests, ideas and institutions struggle for supremacy. Thesis, anti-thesis meet with resulting reconciliation expressing itself in a synthesis providing for further development. Causality in society therefore is dialectical.³⁶

The clash of interests, in this instance of different explanations of the disease process, had ideological consequences for the definition of prevention and practical effects in the provision of health care which have, so far, been overlooked.

To begin with the reception of germ theory and its impact on existing theories of disease amongst the medical profession at large outside the circle of the Chadwickian

orthodoxy is not taken into consideration by those who accept the anti-contagionist image of mid-Victorian medicine without qualification.³⁷ The extent to which existing theories of pathological and chemical specificity of disease were simply reinforced by bacteriological etiology begs a question concerning the influence of the "orthodox heresy" on doctors engaged in public health work.³⁸ The actual, rather than the assumed, relationship of scientific theories to the development of hygiene as a preventive technology must subsequently be examined if this question is to be investigated historically. Whether the bacteriological explanation of the disease process was ignored or incorporated into the process of professionalisation of preventive medicine during the later Victorian period must consequently be readressed as an unchartered issue rather than one which can be taken for granted as proven.³⁹

The second term which this dissertation is concerned with is professionalisation. The emergence of medical practice as a professional occupation in the context of modern industrialised society has been examined by historians, sociologists and doctors themselves who have been interested in documenting the history of their art and its various specialisms.⁴⁰ A tradition of self-reflection begun by Edward Mapother (1835-1908) in 1868, and developed by Samuel Squire-Sprigge (1860-1937) in 1905, on the growth of the medical profession in the 19th-century has come under more and more discussion.⁴¹ Studies have subsequently concentrated on who made up the profession, how

it was stratified and which factions were most powerful within it. Doctors employed by the state have been studied , in this context, in order to examine their role in the foundation of medicine as a form of social welfare. Ruth Hodgkinson, for example, examined the poor law medical officers of England regarding the initial controversies concerning their qualifications, method of appointment, salary, tenure, duties, assessment of efficiency and division of their districts during the early years of their establishment.⁴³ Jeanne Brand took the investigation further by looking at the parish doctor in the last quarter of the century.⁴⁴ In particular, Brand examined the reform movement within the Poor Law Medical Officers Association led by Joseph Rogers during this period, and his opposition to the deterrence principle in poor law medical relief. Reforms demanded during the 1870s together with changes in qualification, central supervision, extension of facilities and outdoor relief meant, in Brand's view, that by 1900 the activities of the medical officers "unquestionably had brought improvements in public care for the sick poor."⁴⁵ Brand was careful to qualify this however with the fact, demonstrated by the 1905-1909 Poor Law Commission, that these reforms were only repairing a hopelessly inadequate system.⁴⁶

While Hodgkinson's work became incorporated into a study of the development of the poor law as a whole, Brand's work extended into an examination of the broader relationship between the medical profession and government action in

public health policy specifically.⁴⁷ In her book on Doctors and the State (1965) she looked at private practitioners and medical officers of health in addition to poor law medical officers. The 1911 Insurance Act was, she believed, the first step toward comprehensive state responsibility for the provision of health care. A step which was arrived at, she claimed, not only in response to the social and economic changes of the 19th-century, but also one in which the medical profession played a significant role. Brand cited the activities of the Poor Law Medical Association, the British Medical Association and the Society of Medical Officers of Health during the 1890s as creating political pressure for the expansion of public responsibility for health care. Medical officers in government service, she claimed, were the first to recognize the need for extending interventionist policies. Newsholme's "socialist" approach was, in her view, the natural sequel to Simon's "interventionist philosophy".⁴⁸ The demand for state action was however, as Brand points out, not so much a coherent political objective as a function of the expansion of the medical profession itself.

A question emerges graphically from Brand's analysis however which she herself does not address. Professional expansion clearly took place during the 1890s but not of one single medical body. Occupational division did not produce new branches of the medical profession but led to a major division within it. Brand failed to examine the process of the professional separation

of prevention from treatment. Consequently, she also failed to give an account of the division of medical interests in relation to the development of comprehensive health care by the state. She did not examine, for example, how the division of medical interests meant that the 1911 Act was in conflict with different sets of professional aims and objectives for entirely different reasons.⁴⁹

The object of study here is the central feature of this division. Poor law medical officers, though employed in public service, continued to practice curative, clinical medicine in the same way as their private practitioner colleagues. Medical officers of health however were practising a different type of medicine altogether. The function of their office required specific training in a specialized area of knowledge. This specialized practice begat its own aims, goals and objectives. Consolidation of these through the professionalization of preventive medicine resulted in a sub-division of this occupation from the medical profession as a whole.

The discussion of doctors who became M.O.H.s begins, in Chapter I, with an analysis of who some of them were and what kind of medical background they had. There was only scope within the dissertation to complete the collective biography of the metropolitan M.O.H.s. It is important to stress that no inference can be made regarding provincial officers on the basis of this study. There are many reasons to assume that the career histories

of men who took up provincial posts frequently differed from those who became metropolitan officers. Firstly, there were a number of different categories of provincial appointments, all of which changed over time with new legislation and through local authority combination of districts. The structure of the provincial service was divided between urban and rural districts, either of which could contain large or small populations. Different classes of officers were recruited to different categories of appointments. Metropolitan posts were, by contrast, more homogeneous but still attracted different classes of medical men to them. An important reason for completing the metropolitan study, however, was to observe whether, even within this homogeneous category, recruitment patterns changed from the first officers appointed in 1856 up to the end of the century.

The dissertation follows the consolidation of these doctors, and the representatives of their provincial colleagues, into their new sub-profession through: the development of their technical training, in chapter II; the activities of their professional society, in chapter III; their interaction with other contemporary professional associations which also claimed to be members of the preventive medical community, in chapter IV; and finally in an examination of the knowledge on which their technical expertise was legitimated, in chapter V.

The study of professionalization as a social process originated in Sociology when Max Weber first discussed its function within the development of bureaucratic modes of social organisation.⁵⁰ It was subsequently expanded through the work of Carr-Saunders and P.A. Wilson during the 1930s.⁵¹ The case of the medical profession was examined by Talcott Parsons at this time as part of his critique of utilitarian economics in which he proposed that The Structure of Social Action (1937) was not based on universal motives of maximised self-interest but on interactive systems of normative behavior.⁵² An important addition to the analysis was made by Everret Hughes when, in his article on "The Making of the Physician" (1956), he identified the crucial role of "licence" and "mandate" as defining characteristics of professionalisation, through which an occupational group secured a market monopoly on the supply of specialized services.⁵³

The sociology of professions has since undergone a number of revisions of theory and empirical research, and currently the whole subject is the centre of fierce debate.⁵⁴ The main feature of the debate, as Elliot Freidson has pointed out, is the problem of defining the phenomenon of a profession sufficiently to differentiate it from other occupational groups.⁵⁵ Without a reconciled definition the study of professionalisation becomes difficult to document. A means to escape this dilemma, Freidson suggests however, is by grounding the definition of professional occupations in an historical understanding of the process of professionalisation itself.

Generalizable analytical values may have to be sacrificed as a consequence, but replaced with historical, comparative studies of the professionalisation of individual occupational groups.⁵⁶ For these purposes the collective biography of career histories, examination of patterns of specialization, the significance of licensing and the achievement of market monopoly through mandate are equally useful methodological tools for both historians and sociologists.⁵⁷ A synthesis of approach between the two disciplines could thus be fruitful in an historical reconstruction of the social reality of professions.⁵⁸

The above methods and approach are used here to examine what Edward Seaton called, "a revolution", and William Beveridge described as a specifically "English revolution" in social medicine.⁵⁹ A fundamental question to be asked, however, is to what extent did the professionalisation of prevention constitute a revolution in social medicine. In approaching this issue it is necessary to re-address perhaps not Rosen's original question, "What is social medicine?" but rather to ask, "What was and has been social medicine?" .The original question implied that there existed some universal category which transcended any historical set of social relations. There have been many ideal representations of this universal. John Alfred Ryle (1889-1950) believed, for example, that social medicine dealt with health and sickness in the context of its intimate relations bound up with man as a person, member of a family and larger social groups.⁶⁰

His definitive statement was that:

social medicine, deriving its inspiration more from the field of clinical experience and seeking always to assist the discovery of a common purpose for the remedial and preventive services, places the emphasis on man and endeavours to study him in relation to his environment.⁶¹

This concept was clearly grounded in one of social pathology,⁶² whereas Ryle's contemporary, René Sand (1877-1953) felt that the term was equivalent to that of medical sociology.

La médecine sociale est l'art de prévenir et de guérir considéré dans ses bases scientifiques comme dans ses applications individuelles et collectives, du point de vue des rapports réciproques qui lient la santé des hommes à leur condition. Médecine sociale et sociologie⁶³ médicale sont ainsi des terms équivalents.

According to the collective editorship of the British Journal of Preventive and Social Medicine during the 1950s, social medicine was taken to mean the biological needs, interactions and disabilities of human beings living in aggregates plus the numerical, structural and functional changes in human populations.⁶⁴ For Hogden, McKeown, Taylor, Frazer Brockington, et al. it was a science based on statistical analysis of environmental agencies relevant to health.

Competing definitions, each with their own emphasis, illustrate the difficulty of deriving an ideal universal category of social medicine against which historical relations can be measured. Accounts of historical definitions of social medicine, however, have also suffered from assumptions which are currently being challenged. Virch-

ow's model of social and economic relations of medicine, for example, is currently being compared to socialist theories of social medicine in Germany during the same period, held by doctors employed in the workers' guilds and unions.⁶⁵ The achievements of the social hygiene movements of Alfred Grotjahn. (1869-1931) and Bismarck's social policies relating to health are equally under critical examination together with the British Insurance system.⁶⁶ The assumption that social medicine revived in Britain during the 1920s, in response to the failure of bacteriological etiology to predict or prevent the great influenza epidemics of 1918 and 1919, coincides with the idea that the slow extension of personal health care ultimately resulted in the emergence of medicine as a social welfare service.⁶⁷ But if, as Hennock has suggested, a re-phasing of the history of social theory should emphasise the 1890s as an important period of development, then similarly a re-phasing of the history of social medicine might be valuable.⁶⁸

The professionalisation of preventive medicine was not a conscious attempt by M.O.H.s to assert the social and economic relations of health care as the responsibility of the state. The pre-conditions for this assertion, however, were set during the period when the interdependent nature of systems of prevention were increasingly the central concern of the profession. An attempt is made here to show that social medicine did not emerge, suddenly, in Britain with a growing preoccu-

pation with social organization of personal health care services after 1911, but was pre-figured in the activities of an emergent professional group of preventive practitioners prior to that date.

The effectiveness of the professionalisation of prevention on the improvement of the "people's health"⁶⁹ is not within the scope of this dissertation. The statistics of mortality and fertility fluctuations and the growth of population since 1800 is the subject of comprehensive analyses.⁷⁰ New research on the progress of infant mortality has recently been completed in this context.⁷¹ The role of the public health officer in the reduction of mortality in some individual metropolitan localities has also been the subject of recent analysis.⁷² It is not proposed to reproduce similar work here.

The development of preventive medicine did not take place in isolation or without opposition. Conflict between the sovereignty of the community over the individual, the suffering of animals and the progress of experimental physiology, expressed themselves in civil movements which did not see the benefits of public health outweighing its costs. Anti-vaccination, anti-vivisection and opposition to the contagious diseases acts have already been the subject of extensive studies which describe the context of hostility.⁷³ For this reason these subjects have not been examined again here, even though their relevance is obvious and could be fruitfully incorporated into further research on the topic of the dissertation.

The politics of public health in local government, or in the corridors of power in Whitehall, are also not the subject of primary research at this stage of the study. Alternatively, what has been examined here were new patterns of "response to the problems of disease created by industrialism" which occurred after the decline of state medicine in central government.⁷⁴ During the period between 1889-1911 questions concerning the provision of health care moved from the centre to the periphery, out of the realm of traditional politics into the realm of a new form of politics in the modern state, the politics of expertise. During this period a group of professionals first staked their claim in a national system, a claim which remained a strong one with increasing vigour until it was eliminated over half a century later. The politics of expertise in health care during the last years of the old century were to have significant effects upon the relationship of the state and medicine during the new. The expertise itself is the central focus of the research which follows.

NOTES.

- 1: George Rosen, "What is Social Medicine ?" in The Bulletin of the History of Medicine, 1947, Vol. XXI, p. 730
- 2: Ibid. p.675
- 3: E. Ackerknecht, Rudolf Virchow. Doctor, Statesman, Anthropologist. (Madison, The University of Wisconsin, 1953), p. 124.
- 4: Ibid. p.125
- 5: Ibid. p.130, and pp.137-146.
- 6: Ibid. p.131
- 7: Ibid. p.132
- 8: Rosen, (1947), op.cit. pp.675-730.
- 9: George Rosen, From Medical Police to Social Medicine, Essays on the History of Health Care. (New York, Science History Publications, 1974), pp.120-155.
- 10: R.M. Macleod, "The Anatomy of State Medicine: Concept and Application." in F.N.L. Poynter, (ed), Medicine and Science in the 1860s. (London, Wellcome Institute, 1968), pp. 201-202
- 11: Ibid. p. 200
- 12: R.H. Shryock, The Development of Modern Medicine an Interpretation of The Social and Scientific Factors Involved. (London, University of Wisconsin, 1979) pp.221-228 ; see also , C. Frazer Brockington, A Short History of Public Health (London, Churchill, 1950) and W. Frazer, The History of English Public Health (London, Ballière, Tindall and Cox, 1950)

- 13: Shryock op.cit. p.214. For biography of William Farr and his contribution to the development of the public health system, see, John M. Eyler, Victorian Social Medicine. The Ideas and Methods of William Farr. (Baltimore, Johns Hopkins, 1979).
- 14: S.E. Finer, The Life and Times of Edwin Chadwick (London, Methuen, 1952), pp.209-229
- 15: M. Pelling, Cholera, Fever and English Medicine, 1825-1865, (London, Oxford University Press, 1978), pp.1-33.
- 16: Shryock, op.cit. pp.221
- 17: Ibid.
- 18: Ibid. pp.223-228.
- 19: R. Lambert, Sir John Simon 1816-1904, (London, Macgibbon, and Kee, 1963) pp.221-260
- 20: Ibid. pp.261-286
- 21: H. W. Rumsey, Essays on State Medicine (London, Churchill, 1856), pp.2-56.
- 22: Ibid. pp.40-54; and pp.341-346.
- 23: Ibid. pp.89-137
- 24: Lambert, op.cit. pp.518-577
- 25: Ibid.; see also, R.M. Macleod, "The Frustration of State Medicine, 1880-1889." in Medical History, Vol. 11, 1967, pp.15-40
- 26: Macleod, (1968), op.cit. p.227
- 27: Journal of State Medicine, Vol. 1, 1884, cited by Macleod, op.cit.

- 28: Macleod, (in Poynter, 1968), op.cit. p.227
- 29: Arthur Newsholme, Evolution of Preventive Medicine, (Baltimore, William and Wilkins, 1927) and George Newman, The Rise of Preventive Medicine, (The Heath Clark Lectures 1931) (London, Oxford University Press, 1932).
- 30: M. Pelling, "Medicine Since 1500." in P. Corsi and P. Weindling, Information Sources in the History of Science and Medicine, (London, Butterworth Scientific, 1983) p.385
- 31: F.B.Smith, The People's Health, 1830-1910. (London, Croom Helm, 1979) pp. 9-11; pp.13 f,
- 32: T. . McKeown, The Role of Medicine, (Oxford, Basil Blackwell, 1979)
- 33: Ibid. pp.55-59; pp.64-66; pp. 121-124
- 34: T. McKeown, "A Sociological Approach to the History of Medicine", in Medical History , Vol. 14, 1970, p.342.
- 35: See Frazer, op.cit.; see also discussion of Ackerknecht and Underwood in Pelling, (1978), op.cit. (1978), p. 302; and A. Wohl, Endangered Lives. Public Health in Victorian Britain. (London, Dent, 1983), pp.121, 124, 128-141; 142-165.
- 36: G. Rosen, "Social Aspects of Jacob Henle's Medical Thought." in The Bulletin of the History of Medicine, Vol. V, 1937, p.510
- 37: Pelling, op. cit. (1978), pp. 34-80

- 38: W.Bynum, "Darwin and the Doctors: Evolution, Diathesis and Germs in 19th-Century Britain." in Gesnerus, Vol. 40, 1983, 49-52
- 39: As in McKeown for example. See, G. McLachan and T. McKeown, Medical History and Medical Care, (London, Nuffield, Oxford University Press, 1971)
- 40: P.O.Williams (ed) Careers in Medicine (London, Hodder and Stoughton, 1952)
- 41: E.D. Mapother, The Medical Profession and its Educational Licensing Bodies (Dublin, Fannin and Co. 1868); and S. Squire Sprigge, Medicine and the Public (London, Heinemann, 1905)
- 42: See for example, J. Peterson, The Medical Profession in Mid-Victorian London (Berkley, Los Angeles, University of California Press, 1968); I. Waddington, "General Practitioners and Consultants in Early 19th-Century England: The Sociology of an Intra-Professional Conflict", in J.Woodward, and D.Richards, Health Care and Popular Medicine in 19th-Century London, (London, Croom Helm, 1977); N. Parry and J. Parry, The Rise of the Medical Profession: A Study of Collective Social Mobility. (London, Croom Helm, 1976) ; F.Honigsbaum, The Division in British Medicine, (New York, St. Martins Press, 1979).
- 43: R.Hodgkinson, "Poor Law Medical Officers of England", in Journal of Medical History, Vol. XI, 1956, 299-338
- 44: J. Brand, "The Parish Doctor: England's Poor Law Medical Officers and Medical Reform, 1870-1900." in the Bulletin of the History of Medicine, Vol. 35, 1961, pp.97-122.
- 45: Ibid. p.121

- 46: Ibid.
- 47: R. Hodgkinson, The Origins of the National Health Service. The Medical Services of the New Poor Law, 1836-1871 (London, Wellcome Institute, 1967); J. Brand, Doctors and the State. The British Medical Profession and Government Action in Public Health 1870-1912. (Baltimore, John Hopkins, 1965)
- 48: Brand, (1965), op.cit. pp.232-234
- 49: Ibid. pp.209-242.
- 50: M. Weber, (trans. T.Parsons), The Theory of Social and Economic Organisations (New York, Free Press, 1964)
- 51: A.M. Carr-Saunders and P.A. Wilson, The Professions, (London. Oxford University Press, 1964, 1st edition 1933)
- 52: T.Parsons, The Structure of Social Action (New York, Free Press, 1968, 1st edition, 1937)
- 53: E.C.Hughes, "The Making of a Physician." in Human Organisation, 1956, Vol. 14, pp.22-25.
- 54: See, R. Dingwall and P.Lewis, The Sociology of the Professions, Lawyers, Doctors and Others, (London, Macmillan Press, 1983), *passim*.
- 55: E. Freidson, "The Theory of Professions: the State of the Art." in Dingwall and Lewis, op.cit. pp.21-22
- 56: Ibid. Freidson, pp.34-37.
- 57: See for example M.Johnson, "Professional Careers and Biographies." in Dingwall and Lewis, op.cit. pp.242-262; also P.Larkin, Occupational Monopoly and Modern Medicine (Tavistock, London and New York, 1983).

- 58: For discussion of historical sociology see, Lucien Goldman, The Human Sciences and Philosophy (translated by H.V.White&R.Archer, London, J.Cape, 1969), pp.23-34 and Peter Burke, Sociology and History (London, George Allen and Unwin, 1980); for recent adaptation of method in history of science see for example, D. Mackenzie, Statistics in Britain 1865-1930. The Social Construction of Scientific Knowledge (Edinburgh, University Press, 1981); and for development of social constructionist theory in medicine see, P. Wright and A.Treacher (eds) The Problem of Medical Knowledge Examining the Social Construction of Medicine (Edinburgh, the University Press, 1982)
- 59: Both quoted in Macleod, op.cit. (1968) p.227
- 60: J.A. Ryle, Changing Disciplines, (London, Oxford University Press, 1948)
- 61: Quoted by Iago Galdston, in a review of Ryle, (1947) in Journal of History of Medicine Vol VII, 1952, p.306. Alfred Ryle, the brother of Gilbert Ryle, became Regius Professor of Physic at Cambridge in 1935 and the first Professor of Social Medicine in England, at Oxford in 1943; see D.N.B. Vol. 1941-1950, pp751-752.
- 62: For fuller discussion of his concept of social medicine as social pathology see, J.A. Ryle, "Social Pathology" in Iago Galdston, (ed) Social Medicine (New York, The Commonwealth Fund, 1949), pp.55-75.
- 63: René Sand, Vers La Médecine Sociale, (Paris and Bruxells, Ballière, and DeSoer, 1948), p. 576
- 64: "Notice to Contributors." in Journal of Preventive and Social Medicine Vol. 7, 1953.

- 65: A. Labisch, D. Milles, R. Müller, L. Machtan, C. Bury, unpublished papers on, "Recent Trends and Developments in the Social History of Occupational Medicine in the Federal Republic of Germany." (Bremen, 1983) delivered at the Annual Conference of the Society for the Social History of Medicine, June 1983.
- 66: E.P. Hennock, "The Origins of British National Insurance and the German Precedent"; J. Tampke, "Bismark's Social Legislation: A Genuine Break-through ?", both articles in W.J. Mommsen, and W. Mock, (ed), The Emergence of the Welfare State in Britain and Germany 1850-1950 (London, Croom Helm, 1981) pp. 84-106 and pp. 71-83.
- 67: Iago Galdston, Social and Historical Foundations of Modern Medicine (New York, Brunner/Mazel, 1981) p.80
- 68: E.P. Hennock, "Poverty and Social Theory in England: The Experience of the Eighteen Eighties" in Social History , Vol. I, 1976, pp. 67-91
- 69: See, F.B. Smith, op.cit.
- 70: T. McKeown, The Modern Rise of Population (London, Edward Arnold, 1976)
- 71: D. Dwork, The History of the Infant Welfare Movement in England 1898-1918 (Unpublished PhD Thesis, University of London, 1984)
- 72: A. Wilkinson, The Beginnings of Disease Control in London: The Work of Medical Officers in Three Parishes 1856-1900, (Unpublished D.Phil. Thesis, University of Oxford, 1980)
- 73: See: R.M. McLeod, "Law, Medicine and Public Opinion: The Resistance to Compulsory Health Legislation, 1870-1907." in Public Law, 1967; Richard French, Anti-Vivisection and Medical Science in Victorian Society (London, Princeton, 1979); P. Mchugh,

73: Prostitution and Victorian Social Reform, (London,
Croom Helm,1980).

74: Rosen,(1947), loc. cit.

METROPOLITAN MEDICAL OFFICERS OF HEALTH,
1856 - 1900.

History of a Public Image.

The origin of the term 'medical officer of health' remains uncertain.¹ The first conception of the office however was made in Chadwick's Report of 1842.² The text of the report revealed his image of both the function of the M.O.H. and what kind of individual should be recruited to fulfil it. Here, Chadwick outlined the objectives of 'prevention' without making any concessions to curative medicine. This was strongly represented in the qualifications recommended for a district medical officer.³ More specifically these qualifications were stated in a letter to Macvey Napier in 1842 as being exclusively those of engineering and actuarial statistics. The problems of administering the public health law could only be resolved through,

the application of the science of engineering of which medical men know nothing. The great preventives....are operations for which aid must be sought from the science of the civil engineer, not from the physician.⁴

This first conception of the M.O.H. as a civil engineer was followed subsequently by a number of other 'public images'. By the time the national compulsory appointment of officers was under review during the investigations of the Royal Sanitary Commission, 1868-1871, a different concern over the occupational status of the M.O.H. was being expressed.⁵ On this occasion Henry Rumsey pressed the case for doctors who were independent from

private medical practice to be appointed to the new posts.

I consider that no-one should fill such an office as I have proposed unless he had been engaged in the curative practice of his profession and I would add to my answer that I do not think the appointment of physician or surgeon to a hospital or to any great institution of that kind where men of high ability give their opinions for the benefit of the poor, would be at all incompatible with duties of an office of health; but I do think that the duties of curative practice among private patients as incompatible with the proper and independent functions of such an officer as I have proposed.⁶

A public image of the office had clearly shifted from Chadwick's civil engineer to Rumsey's independent medical practitioner. How was such independence to be achieved? During the second reading of the Public Health Bill in 1872 Lyon Playfair struggled with the problem.⁷

And what class of men does the Bill look to for so much independence? To the poor law medical officers? That is a meritorious hard worked and poorly payed class of medical men; but they are already borne down by the extent of their curative duties. If you add extensive preventive duties to these, and even pay them well for the new work, what chance is there that both the curative and preventive functions will be efficiently executed? It would have been possible if local authorities were united into county areas to have obtained medical men who relinquished the cure of disease in order to have no conflict between the interests of his patients and those of the public; for a medical man must be well paid to secure independence of action when he devotes his whole time to the health of communities instead of individuals.⁸

Unlike Rumsey, Playfair was not naive about the extent of the demand which a public health office placed upon the practitioner who undertook it. The feasibility of the appointment being filled by the medical officers of the poor law was, as Playfair noted, unworkable. Obtaining independent

practitioners however would only have been possible through the creation of large county authorities with sufficient funds to provide a full-time salary. The creation of county officers would have to wait until the Local Government Act of 1888.

During the period which followed the 1888 legislation yet another image of the M.O.H. emerged. The "preventive practitioner" was characterised as a scientific researcher applying his knowledge to the discovery of the causes of disease. Sidney and Beatrice Webb, for example, considered that:

We are inclined to think that, in England today, there is far more scientific research into the cause and treatment of disease done by the medical men of the Public Health Service in proportion to their numbers (not to say their financial resources) than in any other branch of the medical profession.⁹

The scientific observer of disease had come a long way from Chadwick's sanitary engineer. If these were the shifts of the public image of the M.O.H., however, then what was the reality which underlay them?

Although Chadwick emphasised the need for engineering qualifications in his district officers, initially the office did not have any specific prerequisites for appointment. An instruction issued from the General Board of Health to all local boards in 1851 was the only statement outlining duties and qualifications until 1855.¹⁰ This instruction was an interpretation of a letter written to the Board by William Duncan, which stated the requirements of the office based on his own experience. Duncan was the first officer to be appointed. His post was created through the Liverpool Sanitary Act 1846 with which the city attempted to institute

the beginnings of disease control amongst its population.¹¹ Duncan was forty-one years of age when he became an M.O.H. and had already established an extensive consulting practice in Liverpool which made him a leading medical figure amongst the community. There are few biographies of distinguished early M.O.H.s, the only major ones being those of Duncan himself and John Simon who became the first officer for the City of London in 1848.¹² Apart from these the most systematic information on them has been compiled by C.F. Brockington in his widely known study of medical officers of health appointed throughout England and Wales between 1848-1855.¹³

After the Public Health Act, officers were appointed sporadically by Local Boards as they were set up through the adoption of the Act under an order from the General Board of Health at Gwydr House.¹⁴ Brockington has pointed out that the fears expressed by The Lancet that, at worst quacks, and at best men of inferior capacity would be appointed under the Act, were never realised.¹⁵ On the contrary he illustrated that "Many men of exceptional capacity, as was to be the case for the vestries and districts of London in 1856, now took up work as officers of health in different parts of England and Wales."¹⁶ His survey of them reveals that all thirty-eight men taking up appointments between 1848-1856 were medically qualified, even if not to practise in London. Amongst them there were eleven with an M.D., seven Fellows of the Royal College of Surgeons, one Fellow of the Royal College of Physicians, five who held important posts in the local infirmaries of their districts and eight who were physicians to local dispensaries. The office was filled in some cases by Justices

of the Peace, and on two occasions by local politicians who eventually became the Mayors of Swansea and Canterbury respectively.¹⁷

From Brockington's data it is possible to pursue further questions about these early officers. Firstly the frequency of age distribution of officers at the time of their appointment yields a median age of forty years.¹⁸ This would indicate that for the majority, the appointment came, as for Duncan, in the middle of their career. It was an additional income in an already well established medical practice. By the very nature of the difficulties involved in collecting data on non-compulsory appointments made under the 1848 enabling legislation it was impossible for Brockington to provide any systematic record of the length of time officers served in their district. This makes it difficult to calculate the extent to which the public health office expanded the careers of these men or not.

The obstacles which Brockington faced in gathering information on pre-1855 officers are not reproduced to the same extent for metropolitan M.O.H.s appointed under the Metropolitan Management Act of 1855. A more detailed survey of these men therefore is possible. An examination of recruitment to the metropolitan public health departments between 1856-1900 will investigate the empirical reality behind an historical public image of the preventive practitioner.

The Public Health Officer In The Metropolis.

The chaotic state of London's administration in the early years of the 19th-century was responsible for the effects of urbanization resulting in a crisis, in which

the advent of the cholera epidemic of 1832 precipitated the necessity for some co-ordinated government of the metropolitan area. Attempts were made to reform the discrepancies in the electoral systems of select and open vestries by John Hobhouse, Liberal M.P. for Westminster, in 1831.¹⁹ Beyond the iniquitous electoral systems of the vestries, however, the local governments were rendered inefficient, almost ineffectual, by the complex system of commissions set up under local acts to perform many different administrative functions; commissions of sewers, improvement, police, etc.²⁰ The City of London, at the heart of the metropolitan area, was a singularly complex corporation hierarchy, consisting of the Lord Mayor, the Court of Aldermen, Court of Common Council, Court of Common Hall and the Commission of Sewers. The City had a powerful lobby in Parliament and had been exempted from all early legislation to regulate local government administration, such as the Metropolitan Police Act of Robert Peel in 1829 and the 1835 Municipal Corporations Act.²¹

Meanwhile the population continued to increase in the metropolitan area and almost doubled between 1830-1850, (1.6 million to 2.3 million), the overall density by one third.²² The report made by Kay-Shuttleworth, Arnott and Southwood-Smith on disease and the poor in London in 1838 demonstrated the consequences of these developments.²³ The first major reform of local government administration from which neither the Metropolitan or City corporations were exempt was of course the New Poor Law authorities set up under the Amendment Act of 1834. The new Boards of Guardians

superseded the parish authorities by being accountable to the Central Poor Law Commission. Similar success however was not achieved by the 1848 Public Health Act. Firstly, the City outwitted their dire, centralist enemy Chadwick by obtaining a City Sewers Act in 1847, while agitation from their lobby in Parliament delayed the first Morpeth Bill.²⁴ By the time Chadwick had seen the Metropolitan Sewers Act passed through the House in 1848 and Morpeth had managed to get the Public Health Act passed, the City was already preparing to initiate its own sanitary administration independently of the General Board of Health.²⁵ The Metropolitan Sewers Commission itself was never to achieve anything beyond increasing debts and a bad sewer at Victoria.²

The failure of the the General Board of Health to bring the metropolitan sanitary crisis under control meant that once it was dissolved in 1854, the need for complete reform of the metropolitan administration was inevitable. The Metropolitan Management Act of 1855 was designed by the president of the reconstituted Board of Health, Benjamin Hall, to do precisely that.²⁷ The champion of the anti-centralist cause, Hall soon discovered the necessity for centralist policies. . . . If he was not convinced at the beginning of the year, by the end of the 1854 epidemic, there could be no doubt remaining. The 1855 Act achieved three major reforms. Firstly it removed the remaining anomalies in the electoral system of the London Vestries and instituted the rules of franchise in the Hobhouse Bill universally. Secondly the Act dealt with the profusion of authorities. Two hundred and fifty Local Acts applied to the Metropolitan area and their over ten thousand commissioners.²⁸ These were abolished

and replaced by a single authority responsible for regulation of the environment, the Metropolitan Board of Works.²⁹ London was divided into forty-five districts, each having either one or two representatives on the Board. The districts consisted of combinations of small parishes or a single large parish. Hall succeeded in this way in regulating the vestry authorities without eliminating them, leaving local self-government substantially intact.³⁰

Lastly, the 1855 Act created the metropolitan sanitary authorities by appointing forty-eight medical officers of health to the District Boards. The Act also laid down preliminary guidelines for the duties of the public health officer. Clause 104 stated that officers were to:

inspect and report periodically upon the Sanitary Condition of their Parish or District, to ascertain the Existence of Diseases, more especially Epidemics increasing the Rate of Mortality, and to point out the Existence of any Nuisance or other local Causes which are likely to originate and maintain such Diseases, and injuriously affect the Health of the Inhabitants, and to take cognizance of the Fact of the Existence of any contagious or Epidemic Diseases, and to point out the most efficacious Mode of checking or preventing the Spread of such Diseases, and also to point out the most efficient Modes for the Ventilation of Churches, Chapels, Schools, Lodging Houses, and other Duties of a like Nature which may be required of him or them, and such Persons shall be called "Medical Officers of Health"; and it shall be lawful for the Vestry or Board to pay every such Officer such Salary as they think fit and also to remove any such Officer at the Pleasure of such Vestry or Board.³¹

Clause 105 described the duties of Inspectors of nuisances in a similar way. They were to investigate all infringements of the by-laws regarding nuisance removal and to undertake the prosecution of offenders.³²

Despite these guidelines however, it was evident that the scope and definition of the duties were largely insufficient. The first meetings of the Metropolitan Association of Medical Officers of Health dealt with little other business than precisely this; defining the duties and procedures of their office between themselves.³³ The forty-eight men appointed in 1856 found themselves the sole sanitary authority responsible to a local board made up of either the parish vestries or representatives of a combination of vestries. They were assisted in their task to seek out and remove nuisances by Inspectors appointed to boroughs under the Nuisance Removal Act of 1854.³⁴ Apart from these broad directives they were left largely to their own devices as to what they should accomplish and how they should do it.

The development of the legislative basis to the Public Health system of course assisted metropolitan officers in fulfilling their mandate and expanded their administrative powers to complete it more efficiently. A major contribution in this respect was the Sanitary Act of 1866.³⁵ Nuisance removal was redefined in this Act which empowered the M.O.H. to examine sanitary conditions in respect of communicable diseases and provide a more comprehensive rather than a piecemeal framework of prevention.³⁶ M.O.H.s could now carry out removal of sick persons, with no proper lodging, to hospital. The sanitary authorities were authorised to provide hospitals and ambulances under the Act and also to erect disinfecting facilities. In the metropolitan area, hospitals and ambulances were provided by the Metropolitan Asylums Board.³⁷

The Metropolitan Asylums District was set up as a new venture in the provision of hospital care for the destitute sick under the 1867 Metropolitan Poor Bill. After much agitation for separate management of the non-able-bodied poor, the newly appointed Tory president of the Poor Law Board, Gathorne Hardy, introduced a bill into Parliament in February 1867 to reform the system of indoor medical relief at least for the metropolis.³⁸ The legislation was aimed at setting up a system which would inaugurate the creation of hospitals and dispensaries, to be administered and financed beyond the existing metropolitan parishes and unions. The principle on which it was to be based was the treatment of the sick in poor law infirmaries which were entirely separate from the existing workhouse management and its deterrent character. For these purposes Gathorne Hardy demanded that a new authority should be created from a combination of parishes and unions. During the reading of the bill, Florence Nightingale, who had been a chief advocate of reform, used her friends and allies in the House to advocate one single Board for the uniform management of the new system. Hardy had envisaged a single administrative body largely for the purposes of managing the common fund but finally under pressure from Charles Villiers and John Stuart Mill in the debates he agreed to set up a single hospital authority for the metropolis and the M.A.B. was subsequently written into and established under the Act. The development of the first state fever hospitals and ambulance service subsequently took place throughout the metropolitan districts under the control of the new authority.³⁹

Increased powers of inspection and removal developed slowly in relation to the control of habitation through the Torrens Act of 1868 and the Acts promoted by Richard Cross⁴⁰ in 1875 and 1879. The result of this legislation was that the sanitary authority was empowered to act upon the recommendation of the M.O.H. to purchase uninhabitable dwellings compulsorily, demolish them and to institute municipal building for rehousing.⁴¹

From the date which the Royal Commission on Public Health began its work in 1868 to the passing of the 1875 Act, the function and status of the M.O.H. was debated extensively.⁴² The discussion dealt exclusively however with the conditions and function of the new service to be established in the provincial districts of England and Wales. The whole relationship between the administrative machinery, jurisdiction of the poor law and public health services were at issue. Both the legislation which set up the Local Government Board in 1871 and that which created the provincial sanitary authorities, Mr. Stansfeld's Act of 1872, were determined by this question.⁴³ As a result, the qualification and duties of provincial officers were governed by the terms under which medical relief was provided under the poor law, to a far greater extent than those of metropolitan men. The Public Health Act of 1875 however affected the metropolitan office directly, consolidating the previously disparate controls over sewage, drainage, offensive trades, nuisances, infectious disease, unsound food, prevention of epidemics, highways and streets, markets and slaughter houses under the responsibility of the sanitary authority.⁴⁴ In 1891 the task of the sanitary authority

in controlling food adulteration was further enhanced when the Food and Drugs Act made the appointment of a Public Analyst compulsory. This measure either added another member to the administrative team of the public health departments or was taken up by the M.O.H. himself as an additional appointment.⁴⁵

The professional status of the whole service of public health officers was altered at the end of the 1880s through the Medical Amendment Act of 1886 and the Local Government Act of 1888. The significance of these measures will be discussed later, but the actual duties of the M.O.H. in the metropolitan districts were more significantly affected by the Public Health (London) Act of 1891.⁴⁶ In 1889 an enabling piece of legislation was passed by parliament whereby a sanitary authority could adopt a system of notification of infectious disease listed in the Act.⁴⁷ The system worked with the co-operation of the practitioners who attended the case whereupon the M.O.H. having received notification of the incidence could take action for removal and isolation of the patient immediately. The power of the notification system gave the M.O.H. a positive preventive procedure in relation to infectious disease. Knowledge of disease incidence no longer had to rely upon inspection from the public health department but could be gathered from direct information of its occurrence through the attending medical practitioners. Increasingly complete and immediate records of infectious disease distribution in the district meant that the measures of isolation and disinfection resulted in more efficient prevention of dissemination.⁴⁸ The value of notif-

ication however was enhanced greatly for the metropolitan officers when, under the Public Health of London Act 1891, the adoption of the 1889 Act was made compulsory for all London sanitary authorities. The London Bill consolidated the system further by providing the M.O.H. with the direct power of removal and isolation, The role of the poor law relieving officer, as instituted under the 1866 Sanitary Act, was eliminated for the metropolitan authorities which, under the 1891 legislation, became exempted. The metropolitan M.O.H. could now arrange for removal and isolation of infectious patients to a fever hospital on notification from the attending practitioner without applying to the relieving officer for permission.⁴⁹

The failure of the Torrens and Cross Acts to deal effectively with the housing problem meant that the need for further legislation became more urgent and by the 1880s it was a major topic of social reform.⁵⁰ In 1883 Andrew Mearns's pamphlet revealed conditions in the slums which encouraged immense interest in the issue.⁵¹ In 1884 Lord Salisbury set up a Royal Commission on the housing of the working classes which resulted in a new Act in 1885. This bill consolidated the law and improved the circumstances of loan schemes for building programmes, but failed to allow municipal housing. The recommendations of the 1885 Commission were not fully realised until the Housing Act of 1890 opened the way for local authorities to begin development schemes.⁵² The duties of officers were not directly effected, however, much beyond extending their responsibilities provided under the Cross Acts.

The legislative basis however was only partly responsible for defining the scope of the public health office and

the day to day procedures of a department. Equally important were relations with other administrations which were responsible for the governance of a locality. Generalisations have been made concerning the relationship of the M.O.H.s to their vestries, the poor law Guardians, the Lunacy Commissioners and in London the Metropolitan Asylums Board and the London County Council.⁵³ However these relationships did vary from one locality to another as any comparison of annual reports by metropolitan M.O.H.s has illustrated.⁵⁴

The structure of urban politics in Victorian cities was a complex struggle of parties and vested interests which did not necessarily reflect the structure of national politics.⁵⁵ The pivotal institution to which all other parochial bodies related was the vestry. It was an essential part of the 19th-century view of democracy through local self-government. In Toulmin Smith's words the ideal of

fixed, frequent, regular and accessible meetings together of the Folk and People in every part, for the common purposes of getting justice nigh at hand, and of dealing it, and also understanding discussing and determining upon all matters of common interest.⁵⁶

The democratic ideal was contrasted by an oligarchic reality. The vestry was often a battle ground between rival élites within the property owning classes whose political ambitions were frustrated elsewhere.⁵⁷ The political rivalries within the urban middle classes however did not prevent public health reform being caught up in another battle. That

was between State intervention on behalf of the community and the sovereignty of ownership by the private individual. Even after the electoral reform of the metropolitan vestries under the 1855 Management Act, their social composition resulted in a mobilization of bias against the regulation of building, municipalization of private water companies, removal of slum tenements, control of common lodging houses, underground bakehouses, slaughter houses, meat markets, demolition of insanitary property etc.. Regulations between individual officers and the vestry authorities depended upon the amount of compromise and tact which they could achieve in order to keep their job and the public health of their district.

Despite its ultimate responsibility to a central authority the Board of Guardians was also intrinsically a parochial political institution.⁵⁸ The poor law relief system constituted the largest local expenditure and monopoly of authority over it was often disputed between the local Guardians and the Vestry. These features of the local poor law did not directly affect the health department of the M.O.H. The system of medical relief did however involve him in applying to the relieving officer for the isolation of infectious cases under the 1867 Act. After the system changed in London in 1891 the main contact between the two administrations was directly through the M.O. of the poor law who was obliged to notify the M.O.H. of all cases of infectious disease that he attended. Some conflict could and did occur in this context but generally the M.O.s often co-operated with the new procedure.⁵⁹ As a recent study of the day to day running of three London health departments has pointed out

however the organisations never operated closely together and the failure of them to do so,

rested on something more than bureaucratic shortsightedness. The tasks of treatment and prevention were essentially distinct however much in connexion with the poor and labouring classes they might have in common.⁶⁰

Equally this study illustrated the fact that little or no supervision of the daily work of the health department of the metropolitan M.O.H. was made by any of the collective governing bodies of London. The Metropolitan Board of Works, and the London County Council influenced health administration in the districts hardly at all and the M.O.H.

acted with almost complete autonomy, independent of reference to other authorities.⁶¹

Independence from supervision may have been one thing but complete autonomy was another. With regard to private medical practice and the dispensary system the M.O.H. was frequently not independent, even if the work of his department was. The metropolitan M.O.H. was always in private practice almost until the end of the century, and often held a number of other medical appointments in addition, such as that of dispensary physician or surgeon. Not until some security of tenure was provided for metropolitan officers after the 1891 Act did some individuals abandon private medical practice entirely. The relationship of the M.O.H. therefore to other administrations and institutions was not always determined by the formal duties of his department. The professional status of the members of the public health officer corps was equally important in defining the ultimate role which they would play in the provision of community health.

By the end of the century the duties of the metropolitan M.O.H. extended far beyond those of the 1855 pioneers of the service. Passive inspection and identification of the source of epidemic disease in their district, recording and analysing the statistics of dissemination, were the main tasks of the original officers. In the 1890s the metropolitan M.O.H. spent less time compiling the quarterly returns of sickness and more on enacting the regulations on overcrowding, slaughter houses and bakehouses, and enforcing the notification laws. The annual reports of officers of the later period went far beyond being a statistical account of work to be done and represented instead a record of preventive procedures undertaken, further research completed and demands for more avenues to be explored. Most importantly the development of the work of the health departments of the M.O.H. was matched by a development of the professional status of the 'office'. It is to this latter issue which we now turn.

The Meaning of Medical Qualifications 1815 - 1886.

Brockington found that all medical officers of health appointed up to 1855 were medically qualified. The same was true of all metropolitan men appointed under the 1855 Act. Differentiation of status within the medical profession both reflected and was determined by the structure of medical education throughout the 19th-century. The type

of medical and academic education each individual received, the social status of his family and his own social mobility were all reflected in the position he attained within the stratification of the profession.⁶² The medical practitioners who took up posts in the metropolitan sanitary districts were products of this system also. From which level of the medical hierarchy were they recruited however? What type of medical education had they experienced and what degree of excellence had they achieved? In order to answer these questions the meaning of the complex network of medical qualifications available, and their changing values throughout the period, must be made clear. The significance possessed by metropolitan medical officers of health can then be incorporated into an analysis of their professional status.

The medical profession during the early years of the 19th-century was formally divided into a tripartite hierarchy, the stratification of which was protected by separate medical corporations of physicians, surgeons and of apothecaries.⁶³ Theoretically the physician was of genteel stock and educated as a gentleman.⁶⁴ He studied both the classical subjects of the arts and humanities and obtained a medical degree from either Oxford or Cambridge university. Subsequently his license from the Royal College of Physicians provided him with the exclusive right to diagnose and treat internal illness from a report of the symptoms without attending the bedside of the patient. Whereas physicians treated patients through their powers of deduction, surgeons treated the symptoms

of disease with their hands. The membership of the Royal College of Surgeons qualified an individual to undertake operations, treat with salves, plasters, liniments or lotions, apply external medicines and practice obstetrics and midwifery.⁶⁵ The M.R.C.S however did not qualify a surgeon to give medicines internally or to mix and dispense drugs. The latter was the province of the apothecary. The apprenticeship and examination of the Apothecaries Hall became a compulsory qualification for the prescription and sale of drugs under the Apothecaries Act of 1815.⁶⁶

General practice in medicine, surgery and drug dispensing however was widespread by the 1830s. The Select Committee on Medical Education discovered in 1834 that there were very few individuals practising the 'art of physic', the 'craft of surgery' or the 'apothecaries trade' alone.⁶⁷ Extra-licentiates of the Royal College of Physicians began to emerge from provincial medical schools who did not have a medical degree but had instead taken the M.R.C.S. as their first qualification. They undertook diagnosis of internal symptoms, applied external medicines and dispensed drugs. Even graduates of Oxford and Cambridge however were found practising general medicine and dispensing drugs in a way contrary to the etiquette of the Royal College of Physicians.⁶⁸ Similarly some of the most distinguished London surgeons undertook both surgical and medical cases. The general

agreement of the hospital surgeons who gave evidence to the 1834 Committee was that they treated so many patients with medical treatment and that equally the London physicians were taking as many fees for surgical treatments, that the traditional boundaries of the profession were breaking down.⁶⁹ Not only had the boundaries between physicians and surgeons disappeared but also the great majority of surgeons were trading as apothecaries.

The Society of Apothecaries was empowered under the 1815 Act to prosecute offending practitioners for dispensing drugs without the possession of an L.S.A. The graduates from Scottish universities were severely inhibited by this measure. At Edinburgh and Glasgow physicians followed the same courses and lectures as the surgeons which enabled them to undertake general practice once they had qualified.⁷⁰ Within six years of the enactment the Scottish graduates were complaining to the Royal College of Physicians of Edinburgh of the unfair way in which they were being penalised under the law.⁷¹ The prosecutions by the Society however were not limited to Scottish physicians only. The holders of the English M.R.C.S. were penalised just as readily for dispensing drugs without having first obtained the licentiate of the Apothecaries Hall. Not through its merits but rather through its defects, the 1815 Act therefore established the L.S.A. as the licence for general practice. It succeeded in preventing surgeons from dispensing drugs but it allowed druggists to practice surgery. There was no legislation which prohibited the practice of surgery without the possession of a qualification.

Therefore many holders of the L.S.A. were legally entering general medical practice without a licence or membership of any of the other medical corporations.⁷² The Society of Apothecaries strengthened their position further in 1827 when they introduced examinations in midwifery into their curriculum.⁷³

The medical reform movement strove to repeal the legal status of the L.S.A. as the qualification of a general practitioner from 1815 to 1858 when the Medical Act instituted either the L.S.A. or the M.R.C.S. as a statutory qualification for entry on the Medical Register.⁷⁴ The 1858 Act was an attempt to police the profession for its own sake and that of its client the general public, and to protect both against unqualified practice. The General Medical Council was set up under the Act in order to regulate the standards of medical education and remove offenders against the professional code of conduct from the Register.⁷⁵

The work of the G.M.C. during the first years of its existence concentrated on supervising and inspecting the examinations of the various licensing boards. The aim of which was as Charles Newman pointed out to create a 'safe' rather than a 'good' practitioner.⁷⁶ Preliminary education, medical curriculum and clinical examinations were all investigated and regulated by the Council with a view to ensuring that the public were no longer subjected to 'ignorant pretenders'. Newman has suggested that in filling

medical students with specialised knowledge at the expense of a general cultural education the new system, after 1858, instituted the era of the skilful technician who was often also generally an illiterate individual. Newman believes that the interference of the G.M.C., particularly in preliminary education debased general standards by eliminating the purely 'cultural' aspects of the preparation of a doctor for his profession. The result in Newman's view was an efficient medical practitioner and not a doctor.⁷⁷

However if the aims of the G.M.C. up to 1870 were to create a technically sound practitioner the process was accelerated after that date through the involvement of the Council in further legislation to reform the licensing qualifications. The 1858 Act had replaced the defects of the 1815 legislation only to create a new anomaly. After 1858 holders of either the L.S.A. or M.R.C.S. qualified for general practice. Thus a practitioner with only one qualification could practise both branches of medicine. Attempts had been made to eliminate this half-qualification of general practitioners by the introduction of licences which combined joint curricula. The L.R.C.P. for example was restructured in 1861 by the Royal College, not as a provincial extra-licentiate but as a conjoint qualification for London medical students.⁷⁸ Despite some efforts such as this and those of the Conjoint Board of Edinburgh and Glasgow which was developed in 1859, the Council was dissatisfied with the remaining opportunity for half-qualified practice under the 1858 Act.

One of the chief proponents of reform to end half-qualification was John Simon. The G.M.C. functioned under the authority of the Privy Council. The medical officer to the Privy Council was therefore a member of the G.M.C. in order to consider applications from it to remove the qualifications of licensing authorities that did not satisfy the standards of inspection from the register. This was the sanctioning authority available to the G.M.C. to regulate the standards of examination and curricula which it never used during the administration of John Simon.⁷⁹ They attempted instead to use 'moral suasion' rather than provide Simon with the opportunity to institute his idea of a 'single portal' into medical practice. The effect of their action was to limit the extent to which they could procure uniform standards and to allow the control of medical education to be determined by the oligopolistic competition of the medical corporations.

In 1869 Simon proposed to the G.M.C. that the multiple licensing system would never provide uniform standards for medical education and that the Medical Act should be amended with a view to instituting a single conjoint board in their place.⁸⁰ The Council supported this proposal and a Bill to Amend the Medical Acts was introduced into Parliament in 1870, by the Lord President of Gladstone's government, Lord Ripon.⁸¹ It was rejected on a misunderstanding of the wording which included the terms 'covering all the ground' to mean that an insufficient representation of the profession on the G.M.C. would result from it. The bill was dropped and was succeeded by a number of subsequent private members' bills

to establish the 'single portal' principle. In the meantime the Council reverted to their policy of moral suasion to encourage the licensing authorities to form conjoint boards. A new bill was introduced by Disraeli's Lord President, Lord Richmond, in 1878 which altered the compulsory conjunction clause of Lord Ripon's Act. This replaced it with the principle of 'voluntary affiliation' and specified that the 1858 legislation be amended to make only 'double qualifications' registrable. Double qualifications were to consist of either two diplomas, one in surgery and one in medicine, or one diploma from a conjoint board.⁸²

The 1878 bill was also rejected. This time the voluntary affiliation principle was opposed by the English Corporations, who were now strongly in favour of compulsory conjoint boards, in fear of the Scottish authorities remaining outside the affiliation system and underbidding them.⁸³

After the successive failure of legislation to be passed Gladstone's government, returned in 1881, appointed a Royal Commission to consider the Medical Acts and their results with a view to amending them. The Commission was chaired by Robert Haldane, Earl of Camperdown and consisted of T.H. Huxley, Sir George Jessel, Sir William Jenner, William Magee, Bishop of Peterborough, Professor Turner of Edinburgh and John Simon.⁸⁴ The result of their deliberations was a recommendation of three divisional examining boards to be set up, one for each part of the kingdom. The Boards were to consist of representatives of universities and the medical corporations. They were to submit their

courses of study and rules of examination to the G.M.C, decide which educational bodies should be recognised as bona fide and appoint divisional examiners.⁸⁵ The State examination, so long sought after by John Simon, was finally to replace those of the medical licensing authorities as the qualification for general practice. The proposals of the Commission were however rejected by half of the Commissioners themselves. A strong attack on the divisional board system and State examination was made in their dissenting statements in the Report of the Commission by Professor Turner, T.H. Huxley and the Bishop of Peterborough.⁸⁶ The resulting legislation abandoned the scheme. The Medical Amendment Act of 1886 finally instituted the 'double qualification' scheme of the 1878 abortive bill together with the system of voluntary affiliation. The 1886 Act therefore did abolish half-qualification but did not succeed in replacing it with one qualifying examination and a uniform standard.⁸⁷

The basic qualification for practice therefore changed throughout the century; 1815-1858 it was the L.S.A; 1858-1886 either the L.S.A., M.R.C.S. or any other single qualification; from 1886 onward double qualifications for general practice was made statutory. The double qualification however was not only represented in the possession of both the M.R.C.S. and the L.S.A. but also in conjoint diplomas. The Scottish conjoint Board was reproduced by the English Corporations when, in anticipation of the Act, the Royal College of Physicians and Surgeons set up their conjoint Board in 1884.⁸⁸ From then on the double qualification was represented increasingly by the examinations of this board

consisting of the L.R.C.P. and M.R.C.S. together.

In addition to the basic licence for practice the changing structure of medical education involved an increasing role for university qualifications. Pioneered by the Scottish colleges, the university medical degree became more easily available for students of London and provincial English colleges. Not only the M.B. but also the post-graduate research qualification of an M.D. was increasingly pursued by doctors after entering general practice in order to improve their chances of moving to larger and more profitable practices and to pick up additional medical posts.⁸⁹

A university degree was not a compulsory qualification for general practice but was a necessary prerequisite for entrance to the upper echelons of the medical profession. A Fellowship in the medical corporations, in England, Scotland or Ireland was always preceded by a university education and some specialisation at postgraduate level. Within the membership of the corporations the controlling factions constituted the elite members of the profession as a whole. These were the 'other' medical profession which Charles Newman has so frequently referred to as being made up of 'cultured gentlemen'. More recently Jeanne Peterson has traced the social origins and educational background of the Fellows of the Royal Colleges of Physicians and Surgeons and discovered a high degree of homogeneity amongst those who formed the controlling caucuses of both institutions.⁹⁰ The latter group commonly attended Oxford

and Cambridge completing a classical liberal education. Amongst the Fellows of the Royal College of Surgeons for example, only 4.8% had an arts degree, but of this small minority 14.3% were elected to hold office in the College. Thus chances of becoming an office holder in one of the Corporations were greatly increased by the possession of an Oxbridge arts degree.⁹¹

The division within the profession between the class of consultant elite and general practitioner class has been cited as being the most important for the development of medicine throughout the 19th-century.⁹² The divisions were represented through the level, type and place of qualification. Beyond the meaning of their qualifications medical men made or lost reputations as a result of their achievements and failures during the course of their careers. The medical qualifications and individual career histories of those doctors who became metropolitan medical officers of health reflected these social relations of the medical profession.

Metropolitan Officers: 1856.

There were forty-eight M.O.H.s originally appointed in the metropolitan sanitary districts under the 1855 Act.⁹³ Table I indicates that the educational background to this first group of officers appointed ranged throughout the spectrum of medical education available before 1858. There were almost as many officers who obtained a Fellowship in one of the medical corporations as there were those who had only the minimum qualifications for practice. Similarly there was a wide distribution of the location of study. A predominant pattern in this respect was the combination of

study at both a London and Scottish institution. Officers frequently took their basic qualifications for practice in London and obtained an M.D. from Edinburgh, less often from Glasgow and rarely but occasionally from St. Andrews. Few officers had experienced the 'liberal' education of a gentleman. Only one officer possessed an Oxbridge arts degree as his highest qualification. Even amongst those officers with a Fellowship only two had received a degree from Oxbridge.⁹⁴

TABLE I

Type of Qualification *	Place where qualification obtained					Total
	London	Scot.	Oxb.	Dublin	Euro.	
F.R.C.P. / F.R.C.S.	13 (27.08)	2 (4.16)		1 (2.08)		16 (33.2)
University degree	3 (6.25)	10 (20.83)	1 (2.08)		1 (2.08)	15 (31.24)
M.R.C.S. & L.S.A. only	16 (33.3)	1 (2.08)				17 (35.38)
Total	32 (66.3)	13 (27.07)	1 (2.08)	1 (2.08)	1 (2.08)	48 (100)

*Type of qualification achieved at highest level.

**Source: Medical Directory England and Wales, 1856-1900;

F.J. Allan, Jubilee Number of Public Health, 1906.

However the public health office did attract members of the medical elite even if they had not been at Oxford and Cambridge as undergraduates. Amongst those who had a fellowship at a Royal College, five were hospital consultants. Nearly all of these officers were renowned for their achievements in clinical medicine. John Syre Bristow was an exception since he became famous not only for his work as consulting physician to St. Thomas's hospital but also for his service of forty-five years at the sanitary district of Camberwell.⁹⁵ Andrew Whyte Barclay (M.O.H. Chelsea, 1856-'84), Robert Barnes (M.O.H. Shoreditch, 1856-'67) and Bernard Holt (M.O.H. Westminster, 1855-'94) all had highly distinguished careers.

Barclay (1817-1884) was a physician who had come from an upper class family and eventually became a member of the powerful ruling elite of the profession. He was born in Scotland the son of one of Nelson's officers. He took an M.D. at Edinburgh and went on to study at Berlin and Switzerland. On his return he entered Cambridge where he took his M.B. in 1843, winning the Mickleburgh, Persee and Tancred Scholarships. After graduating he moved to St. Georges Hospital in London taking up a post as assistant physician. On the retirement of Bence-Jones in 1862 he was appointed full-physician later to join the consultant staff.⁹⁶ He rose through the College of Physicians eventually to become its treasurer in 1883.⁹⁷ An equally prominent member of the London medical elite was Robert Barnes (1818-1901), the founder of the British Gynaecological

Society, which replaced the Obstetrical Society in 1884. The creation of the Society came at the end of a struggle which Barnes had fought since the early days of his career to promote midwifery and the diseases of women as a medical science rather than a surgical specialism. Barnes' work on ovariectomy illustrated the issue of dispute. Traditionally obstetricians left ovariectomy entirely to a surgeon. Contrary to this however Barnes believed that it should be treated by an obstetric physician.⁹⁸ In the same way as Barclay and Barnes were notable physicians, Bernard Holt, (1816-1894), was the consulting surgeon of Westminster Hospital from 1873. During the same year he became a member of the Council of the Royal College of Surgeons until 1878.⁹⁹ All three members of the hospital elite were about 38-42 years old when they took up the metropolitan health appointment. They were already well established in their careers and their public health appointments were entirely subsidiary occupations. Barclay was the only one amongst them who took up any leading role in the formation of the Association of Medical Officers of Health. In the obituaries of Barnes and Holt their public health office was not mentioned. In Holt's case this seems extraordinary since he held his post in the district of Westminster for nearly forty years, until his death in 1894. He was never active however in the development of preventive medicine and never held office in the Society.¹⁰⁰

The hospital consultant was not the only kind of elite medical man, however, in the metropolitan sanitary districts in 1856. Fredrick Pavy (1829-1911), was a consulting physician at Guy's at the time of his appointment as M.O.H. for St. Luke's district. He was one of a generation of English medical scientists who had studied with Claude Bernard during the 1850s when at the height of his career.¹⁰¹ The work on glycogen by Bernard, influenced the entire direction of Pavy's scientific research, which was devoted to the study of diabetes. Bernard had maintained that sugar was released from a store of glycogen in the liver to meet the needs of the tissues and that glycosuria ensues when the sugar content of the blood is too high.¹⁰² Pavy's research opposed Bernard's conclusions and suggested alternatively that glucose existed in a free state in the blood and was excreted by the kidney. Diabetes, Pavy maintained, was a problem of malassimilation of sugar, a failure to incorporate it into larger molecules, probably of a protein nature, with the result that free glucose entered the circulation of the blood and was excreted via the urine.¹⁰³ His physiological research made Pavy, in The Lancet, "a worthy successor to Bence-Jones" and a "pioneer among the chemical pathologists of the modern school."¹⁰⁴ Pavy was also a contemporary of Thudichum. Although both men completed work for John Simon's department during the 1860s, they sustained a controversy over their opposed theoretical paradigms.¹⁰⁵

Of equal status in their scientific careers were Edwin Lankester (M.O.H. St. James 1856-1867), John Burdon Sanderson (M.O.H. Paddington 1856-1867) and William Odling (M.O.H. Lambeth 1856-1862). Lankester (1814-1874) was a prominent meteorologist amongst his contemporaries. He served his term as president of the Meteorological Society while he was serving as the M.O.H. for St. James district. Apart from editing the Society's journal he also edited the natural history section of the Penny Encyclopædia during this period and published and translated, The Natural History of Plants Yielding Food, Schleiden's Principles of Scientific Botany and Buchemeister's Animal Parasites.¹⁰⁶ Apart from lecturing at Grosvenor Place Medical School on physiology and becoming Superintendent of Food Collections at South Kensington Museum, his other main post during the 1860s was that of the Coronership of Central Middlesex. He took up this appointment on the death of Thomas Wakley, editor of The Lancet.¹⁰⁷ Lankester's role as an M.O.H. was an opportunity to extend the practical application of his scientific and legal knowledge which was of as much concern to him as theoretical investigation in his work.¹⁰⁸

Lankester was, like Barclay, Holt and Barnes, in his early forties when he took up the public health appointment. Burdon-Sanderson and William Odling (1829-1921) however were much younger men in 1856 and much closer contemporaries of Fredrick Pavy. These latter three were still in their late twenties and at the outset of their scientific careers. Having studied under Gerhart in Paris, Odling returned to England in 1853 to become the director of the chemical laboratory at Guy's Hospital.¹⁰⁹ It took him less than

ten years to progress to the status of Fullerian Professor of chemistry at the Royal Institution when he succeeded Michael Faraday in 1862.¹¹⁰ Within five years he had moved on further and took up the Waynflete Chair of chemistry at Oxford on the death of Benjamin Brodie in 1867.¹¹¹ Odling's meteoric rise in his academic career was matched by that of Burdon-Sanderson. The scientific achievements of the latter however were of much greater significance. Sanderson graduated from University College London in the same year as Odling had done so at Edinburgh, in 1851. He was a fellow student of Odling at Paris where they both studied with Gerhart in 1852. He also returned to London in 1853. Sanderson worked for Paddington district for five years longer than Odling had done at Lambeth and did not leave until 1867. During his administration at Paddington he coped with two cholera outbreaks and made considerable progress in controlling food adulteration and overcrowding in insanitary dwellings. By 1860 his work had come to the notice of John Simon who appointed him an inspector to the Privy Council's medical department. He completed a number of reports for the Council and in 1869 he wrote an appendix on the "Intimate Pathology of Contagion" in which he made a prophetic statement on the specific causal relationship of micro-organisms to disease.¹¹² In 1870 he retired from all other appointments in order to devote himself wholly to his scientific work the opportunity for which was enhanced in 1871 when he became Superintendent of the Brown Animal Institute.¹¹³ From the Brown Institute

he returned to University College this time as the professor of physiology and eventually was appointed Waynflete professor of physiology at Oxford in 1882. His career developed more slowly than that of his contemporary, Odling. His work on cellular pathology however was of great importance to the development of experimental physiology in England.¹¹⁴

There was still yet another element of the medical elite who took up the metropolitan public health officer-ships in 1856. They were a small group of physicians with prestigious West-End general practices. Thomas Hillier (M.O.H. St.Pancras 1856-'69), Thomas Hunt (M.O.H. St. Giles 1856-'63) and Robert Druit (M.O.H. St. Georges Hanover Square 1856-1865) had all been distinguished students during their training in London hospital medical schools and at Edinburgh University. Subsequently they had all benefited from improving their qualifications and gaining a Royal College Fellowship moving eventually to successful practices with a wealthy metropolitan clientel. Robert Druit (1814-1883) had a typical career history of the mid-century West-End medical practice. He was born into a medical family who had practised medicine for a number of generations at Wimbourne, Dorset and who were related to Charles and Herbert Mayo. After attending Wimbourne grammar school he became apprenticed to Charles Mayo at the age of sixteen. When he was twenty years old he moved to London to walk the wards of Middlesex Hospital and to study with Herbert Mayo at Kings College.¹¹⁵ Qualifying

in 1836 he began his career in a practice at Bruton Street, Berkeley Square. Druit obtained further qualifications amongst them the F.R.C.S. by examination and was eventually elected to the Royal College of Physicians as a Fellow in 1874. As a result of his progress through the medical corporations he was able to move to Mayfair and establish a profitable family and obstetric practice.¹¹⁶ The careers of Thomas Hunt, Hillier and Chapman were similar in form. The public health office was taken up by all of them when they were between forty and forty-five years old and already well established in elite family medical practices. They remained in their sanitary departments for four to twelve years. As for the hospital consultants the public health work held no scientific or professional value for them and could only have provided an additional income for them.

A distinct strata of élite medical men therefore became M.O.H.s in the metropolitan districts in 1856 but they were not entirely an homogeneous group. Within it there were three differentiated types: consultants, medical scientists and West-End family practitioners. The elite strata however constituted a small minority of the entire forty-eight men appointed in 1856. By far the majority, although well qualified had not established a prestigious or promising career before they took up their appointments. There were a group however who did improve their professional status as a result of their work in the public health service.

Edward Ballard (M.O.H. Islington 1856-1871), Robert Dundas Thompson (M.O.H. St. Marylebone 1856-1864) and John

Tripe (M.O.H. Hackney 1856-1894) all made a reputation for the application of their research interests to their public health work. Edward Ballard (1820-1897) left his appointment at Islington in 1871 to become an inspector to Simon's medical department at the Privy Council after completing a number of statistical reports. During the 1880s he worked with Blaxill on the cholera surveys for the Local Government Board.¹¹⁷ Dundas-Thompson (1811-1864) combined a career as a research chemist for the Registrar General's Office and a lecturing appointment in Chemistry with his post at St. Marylebone.¹¹⁸ John Tripe another of the presidents of the Royal Meteorological Society, applied his research to the development of his public health work for the forty-years which he was the M.O.H. for Hackney.¹¹⁹

Commitment to the administrative duties of his district and the promotion of preventive medicine brought Conway Evans (M.O.H. The Strand 1856-1892) to the attention of the regular medical press as a "typical medical officer of health".¹²⁰ Although he continued to practise clinical medicine as an assistant physician at Kings College, his work there for William Robert Smith, who founded the Royal Institute of Public Health, aided the professional development of preventive medicine extensively. He was also a founding member of the Society of Medical Officers of Health.¹²¹

Two aspects of the work of an M.O.H., preventive medical research and administrative efficiency were the basis on which

the future professionalisation of the occupation was built. Both of these qualities were rarely found in one officer in 1856. The competition for the appointment to the City of London, after Simon's departure was an illustration of how these qualities could be equally divided between two candidates. The successful applicant was Henry Letherby, the man who had received the support of The Lancet and had been considered for the post when Simon himself had first competed for it in 1848.¹²² He was the consultant toxicologist at the London Hospital and was therefore in an excellent position to undertake the work of the Public Analyst for the City also.¹²³ The other candidate in 1856 was John Challice (1814-1863). He eventually became the M.O.H. for Bermondsey instead and served there until his death in 1863. Challice was not a scientist although he had been a prize winning medical student of Herbert Mayo. His political interests however had always taken priority over medicine and he became an ambitious and popular local officer in Bermondsey. He succeeded in securing pure and cheap water and gas supplies for the district which is possibly the basis on which he was elected as the Liberal M.P. for the constituency in 1862. His sudden paralysis prevented him from ever taking up his seat in the Commons and his early death meant that his career aims were never fulfilled.¹²⁴

Combining information about the educational qualifications with fuller biographical accounts has made it possible

to gain some insight about the more distinguished original metropolitan M.O.H.s. There remain however a great many officers appointed in 1856 for whom there was no biographical material other than a brief record of their registration in the medical directories of the time. From this information however it was still possible to crosstabulate details of educational attainment with occupational distribution for the entire group. The result was a survey of career characteristics which indicated the social stratification of the office during the first five years that it was instituted in the metropolitan area.

This survey is represented in Table II. Some qualification of the table however must be made if it is to be fully understood. Firstly, the clearest result of the survey of occupational distribution was that a high level of plurality existed among M.O.H.s at this time. Each officer held many posts. It was not possible therefore to construct a table which could include totals in any category of occupation, since each would yield more than 100%. The categories of occupation are an artificial device created for the purpose of analysis but which in reality were not mutually exclusive. Thus when Table II states that seven Fellows of the Medical Corporations held hospital posts it does not indicate the fact that they also may have held academic appointments or worked in a dispensary etc. The table indicates therefore the number of different occupations undertaken by M.O.H.s collectively rather the number of appointments held by individuals.

TABLE II ***

Highest Qualification obtained.	Medical Appts. Held in Addition to M.O.H. Post				
	Hospital Posts	Accademic Appts.	Dispensary Appts.	M.O. to Poor Law	Auxiliary** Med.Appt.
F.R.C.P./	7	7	2	1	3
F.R.C.S.	(14.5)*	(14.5)	(4.16)	(2.08)	(6.8)
Univer-	3	1	4	3	5
sity	(6.8)	(2.08)	(8.3)	(6.8)	(10.4)
Degree					
M.R.C.S.	4	5	5	3	10
&L.S.A.	(8.3)	(10.4)	(10.4)	(6.8)	(20.8)
Only.					

* Percentages indicated in brackets in the table represent the proportion which the raw figure constitutes of the total forty-eight officers.e.g. 14.5% of all officers appointed in 1856 held hospital posts in addition to their M.O.H. and other medical appointments.

**This category includes: Medical Referee for an Insurance Co. etc; Medical Officer to a regiment of the reserve army corps, fire brigade, division of the metropolitan police, prison service.

***Source: Medical Directory England and Wales 1856-1900:
F.J. Allan (ed) Jubilee . Number of Public Health,1906.

In Table I a tripartite hierarchy emerged when the group was divided according to highest level of qualification obtained: Fellows of the Corporations, university degree holders, medical licence holders only. Differences occurred in occupational distribution between levels in the educational hierarchy. Amongst the élite group, additional occupation was concentrated in hospital and academic appointments. The middle level, university degree holders, had a fair proportion of their number

in hospital posts but a much higher proportion holding dispensary posts. The third, less qualified level of the hierarchy had much of their additional occupation concentrated in auxiliary medical appointments.

Some interesting points emerge from Table II. For example, there were very few of the 1856 officers who were recruited from the poor law unions. Only seven out of the entire group of forty-eight, had been or remained poor law and medical officers of health. Far more officers had come from the dispensary service. Neither of these categories however outnumbered the amount of officers holding hospital and academic appointments. A substantial amount of auxiliary medical appointments were held by officers in all three levels of the hierarchy even though the majority were held by licence holders only. Generally however it can be concluded that the first metropolitan M.O.H.s were recruited from all levels of the medical hierarchy in almost equal proportions and all continued to practise medicine in a capacity which was appropriate to their existing professional status.

Recruitment 1857-1887.

New recruits began to replace officers vacating posts within a short time of the first appointments being made. Dr. George Buchanan replaced Thomas Hunt in St. Giles district in 1857. Thomas Orton took up the appointment at Limehouse replacing Alan Cleland in 1859.¹²⁵ Alfred Brown and William Rendle resigned from Streatham and St. Georges, Southwark districts in 1860. Their places were filled by the physician from Streatham dispensary, C.D. Noel and

Henry Bateson a general practitioner from Southwark.¹²⁶

By 1870 thirteen new officers had replaced officers appointed in 1856 who had either resigned or died. During this period the Metropolitan service lost five Fellows of the medical corporations and gained three new ones, lost five university graduates and gained seven, lost five general practitioners with a basic medical licence only and gained three. The largest group of new recruits during the first fifteen years were therefore men who had obtained a university degree to their medical licence. Four of the seven graduates had obtained Scottish postgraduate qualifications taking their M.D. either from Glasgow, Aberdeen or St. Andrews. The other three had an M.D. from the university of London.¹²⁷

Of the six officers who resigned before 1870, four of them were Fellows and two were general practitioners. The other seven vacancies occurring before 1870 resulted from the deaths of the officers.¹²⁸ None who died was older than his early 60s. They had all qualified during the 1830s and 1840s which places them somewhere in their sixth decade of life when they died, all of them before 1866.¹²⁹ Obituary notices exist for only three of them in the medical press, which tell us that John Challice and Robert Dundas Thompson had been ill for some time. Thomas Ansell (M.O.H. Bow, 1856-1866) however, chairman of the court of examiners to the Apothecaries Hall for twenty years, was a cholera victim which was no doubt contracted during the course of his duties that year in his East end sanitary district, while coping with the epidemic.¹³⁰ The cause of death

of the other officers remains unknown, but it is not inconceivable that these men may have suffered a similar fate to that of Ansell. The Medical Directory did record that Alan Cleland at least, "died suddenly", during 1859.¹³¹

Amongst the new recruits there were only two who had already achieved an elite status in the medical profession at the time of their appointment to the public health office. George Buchanan was, when he became M.O.H. for St. Giles in 1857, the consultant physician at the London Fever Hospital.¹³² Henry Sutton (M.O.H. Shoreditch 1867-1891) was consultant pathologist at the London Hospital from 1866-1891. He completed a considerable amount of research in collaboration with Sir William Gull, from Guy's.¹³³ Sutton was however the last elite curative medical practitioner to be appointed in the metropolitan sanitary districts.

Between 1856-1887, by far the majority of new recruits were from the middle ranks of the profession. The post 1858 medical practitioner was increasingly well qualified beyond the level of a basic licence. Many men were qualified by a dual or double qualification, despite the fears of half-licenced quackery. More medical men however were also obtaining medical degrees from the universities especially at post graduate level after they had qualified. The metropolitan public health office attracted men of this calibre far more than it continued to recruit prestigious members of the elite of the profession. Thirty-nine percent taking up appointments during this thirty year period, between 1857-1887, had obtained a university degree and twenty-percent had taken the new London L.R.C.P. . This

middle stratum accounted for nearly sixty percent of the total recruits during this period therefore. Only thirteen percent were drawn from the medical élite and twenty-seven percent from the lower order of the medical hierarchy, possessing an M.R.C.S. and L.S.A. only. An increased proportion were Scottish graduates. Amongst the original officers appointed in 1856 there were twenty-seven percent who had obtained a Scottish medical degree as their highest qualification, forty-five percent of officers recruited between 1857-1887 had done so.

TABLE III*

Highest Qualification obtained.	Place where qualifications obtained					Total
	London	Scot.	Oxb.	Dublin	Euro & U.S.A.	
F.R.C.P./ F.R.C.S	6 (8.8)	2 (2.9)				8 (11.7)
University Degree	4 (5.8)	17 (25.0)	2 (2.9)	1 (1.4)	3 (4.4)	27 (39.7)
M.R.C.S. & L.R.C.P.	5 (7.3)	9 (13.2)		1 (1.4)		15 (22.05)
M.R.C.S. & L.S.A. Only.	14 (20.5)	3 (4.4)		1 (1.4)		18 (26.4)
Total	29 (42.4)	31 (45.5)	2 (2.9)	3 (4.2)	3 (4.4)	68 (100)

* Source: Medical Directory of England and Wales, 1857-1900.

A new model of officer began to emerge during the 1870s and '80s. Although still part-time, for some M.O.H.s their medical practice became a secondary feature of their career. William T.G. Woodforde for example (M.O.H. Bow 1866-1873) remained president of the Oxford and Reading branch of the B.M.A. while he also served as president of the Society of Medical Officers of Health. Woodforde however devoted by far the greater part of his career to public health administration firstly at Poplar until 1873 then later as the county M.O.H. for Berkshire, 1873-1908.¹³⁴ Amongst the most prominent and typical examples of the new type of officer, were Samual Lovett and Thomas Orme Dudfield. Lovett, (M.O.H. St. Giles, Bloomsbury 1875-1891) was educated at Kings College London along with Conway Evans. He was the son of the Parish doctor of St. Giles in whose practice he assisted before and after qualifying. He took up the public health office in the district in 1875, at the age of 42, replacing George Buchanan who then moved to the Local Government Board.¹³⁵ Dudfield, like Lovett, was well established in his parish before he became its M.O.H. He was a member of the Vestry and its sanitary committee in Kensington. They appointed him M.O. for the poor law infirmary in 1861. His predecessor as M.O.H. resigned in 1871 for no apparent reason. Fredrick Godrich was about the same age as Dudfield, they were both in their early forties, but he was not as well qualified. There was no clear explanation why the vestry should change its M.O.H. at that particular moment however.¹³⁶

Both Lovett and Dudfield were leading figures in the Society of Medical Officers of Health.

The City of London authority appeared to have a new policy for their public health administrations during the 1870s and 80s. The new officers to the City and Port of London were all ex-military physicians and surgeons. Henry Letherby died in 1876, a comparatively young man at the age of fifty-nine and was succeeded by William Sedgwick Saunders. Saunders had been a member of the army medical corps since 1846 and served as assistant surgeon with the Royal Fusiliers in the West Indies and North America. Before becoming the City's M.O.H. he had served as a medical officer to the military prison at Fort Clarence and had sailed to serve in the Kaffir War.¹³⁷ It seems that the City had changed its criteria of the officer they required since previously they had filled the post with a hospital consultant physician and a toxicologist. With the creation of an M.O.H. for the London Port Authority, the ex-military corps increased. Harry Leach was appointed in 1873 having served in India and become the resident physician at Dreadnought Hospital for Seamen, from 1862.¹³⁸ When he died in 1879, the Port authority appointed another military man in his place, William Collingridge who was also to serve the City authority later in his career.¹³⁹

The metropolitan public health service provided an opportunity to practise a branch of medical science in the capacity of an employee of the State, or at least Local Government. It has been suggested that this was a major factor in the expansion of the medical profession

into the public health service as a whole.¹⁴⁰ There is little evidence to support this view for the mid-century period. Examples of doctors who entered the public health office and were successful in rising through the bureaucracy to a Whitehall appointment were limited to Simon, Buchanan and only a small selection of doctors who worked for both of these administrations. At the local government level there were a few doctors who abandoned medical practice entirely during the 1870s and '80s for a successful career in government employment. From the metropolis these were M.O.H.s who took up some of the newly created full-time appointments after the Local Government Act of 1888 and some of the earlier County appointments which developed after the 1872 Public Health Act. W.T.G. Woodforde the M.O.H. for Bow(Poplar) until 1873 was an example, already mentioned, of precisely this career pattern. He left his metropolitan district to take up the County appointment in Berkshire created after the 1872 Act.¹⁴¹ Another more well known example was the M.O.H. for St. Pancras, 1872-1884, Shirley Foster Murphey. Murphey had been the director of the London Animal Vaccine Station and Medical Officer of the London Fever Hospital before he took up his appointment at St. Pancras. Throughout his term of office in the district he met with great resistance from the Vestry to his plans for slum clearance and municipal housing. He resigned as M.O.H. in 1884 and set up as an independent public health consultant for the district. Recognition of his achievements came in 1888, with the creation of the greater London Authority he became the first M.O.H. to the County Council. He was

also the first doctor who obtained a knighthood in recognition of his work as a local government officer.¹⁴² Murphey however was the exception rather than the rule. Only six of the fifty-nine officers appointed between 1856-1887 held any other public health office apart from that of public analyst to their district during their careers.¹⁴³

A survey of occupational distribution amongst recruits during this period revealed that it was not as evenly divided between élite and non-élite medical appointments as it had been for the original 1856 officers.

TABLE IV*

Highest Qualification obtained.	Medical Appts. held in addition to M.O.H. post					
	Hospital Appts.	Academic App.	Dispens. Post.	Poor Law M.O.	Public Analyst	Auxil. Appts.
F.R.C.P./ F.R.C.S.	5 (7.3)**	1 (1.4)	1 (1.4)		2 (2.9)	3 (4.4)
University Degree	6 (8.75)	4 (5.8)	7 (10.2)	1 (1.4)	6 (8.75)	15 (22.05)
M.R.C.S.& L.R.C.P.	8 (11.7)		5 (7.3)	4 (5.8)	1 (1.4)	9 (13.2)
M.R.C.S. & L.S.A. Only.	4 (5.8)		3 (4.4)	2 (2.9)	3 (4.4)	8 (11.7)

* Source : Medical Directory for England and Wales 1857-1900.

** All percentages represent proportion of total recruits between 1857-1887, i.e. sixty-eight officers, who held appointments in this category of occupation. As with Table II, this is a survey of occupational distribution amongst the group collectively and does not show the fact that many of the individual officers held more than one appointment in a number of the categories.

Amongst the officers recruited between 1857-1887 there were fewer who held academic and hospital posts than amongst the first group of officers appointed in 1856; forty percent in total compared with fifty-six percent in the original group. A much greater proportion of new recruits held a variety of small auxiliary appointments, fifty percent, and there was still a substantial number of officers working for the public dispensaries, twenty-five percent. Another feature of the type of additional occupation held by this group was that a large proportion of those who held hospital posts were amongst the middle ranking doctors than among elite physicians or surgeons. The nature of the hospital work undertaken by them therefore was quite different from that which was done by the original group of officers. These were not hospital consultancy appointments at the large prestigious London Hospitals. Rather they were posts in local fever or asylum institutions.¹⁴⁴

The first thirty two years of recruitment brought about some change within the structure of the metropolitan public health service. The elite medical men, clinical practitioners or research scientists largely disappeared from the metropolitan districts by the 1880s. In their place was a new influx of middle ranking medical men. This type of medical practitioner was an increasingly well qualified doctor as the result of the internal changes within the structure of medical education during this period. The duties of the public health office became more extensive in this period however and these well qualified doctors found less time for their

private practice and for some their achievements in their health departments became the main focus of their career. Few actually became full-time officers however and exchanged a medical practice for the civil service entirely. Medical men dedicated to the duties of their public health office were evident amongst the recruits from 1856-1887, but single minded preventive administrators were not yet a reality.

The Compulsory Preventive Qualification and After: 1888-1900.

A significant moment in the development of the public health office was the introduction of a statutory qualification for appointment. Clause 21 of the Local Government Act of 1888 stipulated that any medical officer of health appointed to a sanitary district with a population of more than 50,000 must possess a special sanitary diploma.¹⁴⁵ The Act was brought in under Lord Salisbury's government with the main purposes of reorganising the structure of rural administration through the creation of the County Councils. The sanitary issues carried with the reform were promoted mainly by Playfair in the House and supported by the president of the Local Government Board at that time Lord Ritchie. The aim of the clauses relating to sanitary administration was to obtain an efficient system for rural districts which had failed to materialize after the Public Health Act of 1875. The clause affecting the qualifications of M.O.H.s however, although aimed at the appointment of County officers applied equally to large urban districts also. The metropolitan boroughs therefore were directly affected and any replacement of officers made after 1888 would have to take the Act into account.¹⁴⁶

There were thirty-one new men appointed between 1888-1900. Twenty-six had obtained their D.P.H. beforehand. Five had no public health qualification but all of these had worked for a public health department or poor law union previously.¹⁴⁷ Thomas Moore (M.O.H. Eltham, Plumstead, 1894-1899) had received his D.P.H. from Cambridge in the first year it was established there in 1876.¹⁴⁸ He was also the only single individual appointed after 1888 who had a Fellowship in either of the Medical Corporations. Thirteen officers had obtained their D.P.H. during the 1880s, predominantly from Cambridge and twelve obtained their D.P.H. during the '90s nearly all from London.

TABLE V*

Date D.P.H. Obtained	Place Diploma Taken			Total
	London	Cambridge	Scotland	
1870-1880		1		1
1880-1890	4	8	1	13
1890-1900	10	1	1	12
Total	14	10	2	26

* Source: Medical Directory England and Wales 1888-1900

The D.P.H. was a post-graduate qualification. The undergraduate education of post 1888 recruits was predominantly the combination of a university degree and a medical license from the English Conjoint Board. Seventy percent conformed to this pattern. The location of undergraduate university education however differed dramatically from the M.O.H.s recruited before 1888. From 1856 there had been a low level of Oxbridge graduates taking up appointment in the metropolitan sanitary districts. A new influx of Oxbridge men, however occurred after 1888. Previously Scottish graduates had dominated recruitment but in the post-1888 group there were equal numbers from Oxbridge. There was also a new level of officers possessing degrees from the English provincial and Irish universities.

TABLE VI*

Highest** Qualifica- tion	Where Qualification Obtained					Total
	London	Scot.	Oxb.	Dublin	Euro.	
F.R.C.P./ F.R.C.S	1 (3.2)					1 (3.2)
University Degree	3 (9.6)	7 (22.5)	5 +1** (19.3)	3 (9.6)	2+ 1** (9.6)	22 (70.6)
M.R.C.S. & L.R.C.P.	3 + 1** (12.9)	2 + 2** (12.9)				8 (25.8)
M.R.C.S. & L.S.A. Only						
Total	8 (25.8)	11 (35.4)	6 (19.6)	3 (9.6)	3 (9.6)	31 (100)

* Source: Medical Directory England and Wales 1888-1900

** All figures except those marked with a double asterisk also had obtained a D.P.H.

If the educational background of the post-1888 recruits departed from the pattern of the pre-1888 officers, occupational distribution differed even more widely. The London Government Bill of 1891 contained an order by which the sanitary authority in a metropolitan locality could not dismiss an officer without first having the approval of the Local Government Board. This gave metropolitan officers an initial form of security of tenure in their appointments. This measure was not fully introduced for all M.O.H.s, provincial and Welsh, until the 1929 Local Government Act.¹⁴⁹ The 1891 enactment released the metropolitan medical officer of Health from the necessity for a private practice as a precaution against casual dismissal from the sanitary authority. The result was that far fewer men appointed after 1888 held any additional part-time posts. Amongst the entire group of thirty-one only four practised curative medicine in any major capacity; Thomas Moore was a senior surgeon to the Royal Kent Dispensary, Lewis Bryett (M.O.H. Shorditch 1894-1927) was the resident officer to Surrey Dispensary, Oliver Field (M.O.H. Clapham 1889-1905) remained the Medical Officer to his local dispensary and George Yarrow (M.O.H. St. Lukes 1889-1901) apart from being the deputy coroner for North East London was a surgical assistant and lecturer in the City of London Lying-in Hospital.¹⁵⁰ Apart from these four, there was still a high percentage of men, thirty-eight percent, who held 'auxiliary' posts. The greater majority of new recruits after 1888 however, adopted their public health office as a full-time appointment, renouncing curative medical practice entirely. For the majority of post-1888

recruits appointments in a hospital, dispensary or as a poor-law M.O. were recorded as being "late"; i.e. as being held prior to and ceasing upon their adoption as an M.O.H. The only remaining additional employment for this new breed of officer was a part-time teacher or examiner in public health, preventive medicine or hygiene courses in the London medical schools or that of public analyst for their district.

TABLE VII**

Highest qualification obtained ± D.P.H. or non D.P.H.	Medical posts held in addition to M.O.H.						
	Hospital posts	Academic posts	Public Analyst	2nd M.O.H. appointment	Dispensary posts	Poor Law Officer	Auxiliary Posts
University degree ± DPH	1	8*	2		2	1	8
L.R.C.P./M.R.C.S. ± DPH			1			1	1
Non DPH			1	1			2

* Current teaching posts in Public Health Studies only.

** Source: Medical Directory England and Wales 1888-1900

N.B. Thomas Moore was the only officer not accounted for on the above table who was appointed after 1888. His highest qualification was an F.R.C.S.(1867) he also took his D.P.H. in 1876 at Cambridge and was previously M.O.H for Petersfield until 1894 . While M.O.H. for Eltham(1894-1899) he was also senior surgeon to the Royal Kent Dispensary.

Men appointed after 1888 were no longer general practitioners who integrated an interest in public health issues with their clinical work. Alternatively they were trained in the medical sciences, but specialised in preventive subjects. In taking up their appointment in the public health service they renounced general practice for full-time preventive medicine. The great reduction in the level of part-time practice amongst metropolitan M.O.H.s during this period was part of a new professional orientation. Identification with preventive rather than curative medicine was further indicated in the membership of professional and scientific associations which predominated amongst them.¹⁵¹

The career histories of post-1888 preventive practitioners in the metropolis were exemplified by any number of officers. Louis Coultman Parkes, (M.O.H. Chelsea 1892-1923), Reginald Dudfield (M.O.H. Paddington 1899-1924), J.F. J. Sykes (M.O.H. St. Pancras 1889-1912), F.J. Allan (M.O.H. The Strand 1893- 1925) equally represented the career pattern and educational history of the emergent preventive professional. When Edward Seaton left his office at Chelsea, Louis C. Parkes took up the post. Parkes was the son of Charles Parkes, brother of Edmund Parkes who founded the teaching of hygiene at the Military Medical School at Netley and to whom the Parkes Museum of hygiene was dedicated. Born in 1858 he studied for his M.B. and M.D. at University College where he also obtained his D.P.H. in 1883. He never practised curative medicine in any capacity and immediately after qualifying

became an assistant lecturer in hygiene to William Corfield at University College.¹⁵² He combined his appointment at Chelsea with that of public analyst and remained in the academic development of hygiene as a lecturer at St. Georges medical school. His publications on hygiene were multifarious and he wrote a major text with Henry Kenwood, (M.O.H. Stoke-Newington) which remained a standard companion for all students of preventive medicine throughout the eleven editions of its publication.¹⁵³ Parkes was not the only second generation hygienist to take up appointment in the Metropolis during the 1890s. Reginald Dudfield was known always as "young Dudfield", even when during the 1920s he was clearly a senior member of the profession. He was however the son of Thomas Orme Dudfield and he became M.O.H. for Paddington after having been M.O.H. Eastbourne since 1892. He had been educated at Trinity College Cambridge taking the natural sciences tripos in 1882 moving to St. Bartholomew's Hospital to qualify for medical practice in 1885. He returned to Cambridge to take his M.B. and obtained his D.P.H. there in 1888. From the inception of his career he held public health related posts, beginning with medical officer to the Hoverton Fever Hospital. Dudfield became widely respected for his activities in the Society of Medical Officers of Health and edited the journal of the Society, Public Health for eleven years. Dudfield's appointment was full-time combining it only with his work as an office holder in the Society.¹⁵⁴

The post-1888 recruits therefore differed radically from their predecessors in their educational and career histories together with their scientific interests. A predominance of part-time practice was replaced with full-time officers. Fellows of the Royal Colleges were replaced by post-graduates in Public Health. Preoccupations with diabetes and gynaecology etc. was replaced with the pursuit of epidemiological and bacteriological investigation. The compulsory qualification of the D.P.H. was not a cosmetic legitimization of professionalisation. It resulted in attracting recruits for whom their diploma was only one stage in developing an orientation toward the practice of preventive rather than curative medicine.

NOTES.

- 1: W.M. Frazer, A History of English Public Health 1834-1939 (London, Balliere, Tindall and Cox, 1950), p.37
- 2: Edwin Chadwick, Report on the Sanitary Conditions of the Labouring Population of Great Britain, 1842 (M.W. Flinn, ed, Edinburgh at the University Press, 1965)
- 3: Chadwick to Macvey Napier, 1842, quoted by S.E. Finer, The Life and Times of Edwin Chadwick (Methuen, London, 1952), p.228. For further biography of Chadwick see also, R.A. Lewis, Edwin Chadwick and the Public Health Movement (London, Longmans Green and Co., 1952)
- 4: Finer, op.cit. p.218
- 5: For full discussion of the issues involved in the creation of a new service of public health officers and the qualities required in them see, John Simon, English Sanitary Institutions, (London, Castle, 1890), pp.334-352. The views expressed by Simon were summarised by Rumsey in his evidence to the Royal Commission, in 1868. For further reference see, H. Rumsey, Essays on State Medicine (London, Churchill, 1856), pp.297-316
- 6: Parliamentary Papers, 1868-1869, XXXII, First Report of the Royal Sanitary Commission, Minutes of Evidence, p.283.
- 7: Lyon Playfair, (1818-1898), was the professor of chemistry at Edinburgh from 1858, and represented the interest of the university as its Liberal M.P. from 1868-1885. He then became the M.P. for South Leeds, being predominantly interested in issues of social welfare and public health, and a spokesman for the medical profession in the House. His career has been described overall as that of a statesman of science. See, Sir T.Wemyss Reid, Memoirs and Correspondence of Lyon Playfair (London, Cassell, 1899); and D.N.B. , Ist Supplement, pp.1142-1144.

- 8: Hansard, Parliamentary Debates, Commons Vol. CCX, 1872
(London, Cornelius Buck) "Second Reading of the
Public Health Act" April 5th 1872. pp. 857-858.

- 9: Sidney and Beatrice Webb, The State and the Doctor
(London, Longmans Green and Co. 1910), p.205

- 10: C.F. Brockington, Public Health in the 19th-Century
(Edinburgh, Livingstone, 1965) p.141

- 11: W.M. Frazer, Duncan of Liverpool (London, Hamilton
Medical Books, 1947)p.23 For an account of the appoint-
ment at Liverpool see, pp. 45-55.

- 12: Royston Lambert, Sir John Simon, 1816-1904, and
English Sanitary Administration. (London, Macgibbon
and Kee, 1963); Frazer, op.cit.

- 13: Brockington, op.cit. pp. 187-191, and Appendix IV.

- 14: Ibid. pp. 141-163

- 15: Ibid.p.141

- 16: Ibid. p.152

- 17: Ibid. pp.152-153

- 18: This calculation is based on the information of
dates and qualifications of the thirty-eight M.O.H.s
appointed under the 1848 Act given in Brockington,
op.cit. Appendix IV.

- 19: John Hobhouse (1786-1869) see, D.N.B. Vol. IX,
pp. 941-945.

- 20: Francis Sheppard, "The Crisis of London's Government", in David Owen, (Roy Macleod ed.), The Government of London 1855-1889 (Cambridge Massachusetts, London, Harvard University Press, 1982), pp.23-30; see also, F.Sheppard, London 1808-1870:The Infernal Wen. (London, Secker and Warburg, 1971), pp.1-46
- 21: Ibid. Sheppard in Owen, op.cit. , pp. 23-30
- 22: Ibid. p.25
- 23: See, Finer, op.cit. , pp.150-163.
- 24: Royston Lambert, Sir John Simon, 1816-1904, and English Sanitary Administration (London, Macgibbon, and Kee, 1963), pp.65-70.
- 25: Ibid. see also, Simon, op.cit. , pp.247-257
- 26: H. Jephson, The Sanitary Evolution of London (London, Fisher and Unwin, 1907) pp.76-77.
- 27: Sir Benjamin Hall, (1802-1867) Baron Landover. Liberal M.P. Monmouth, later president of the General Board of Health in Lord Palmerston's administration. see, D.N.B. Vol. 8, pp. 943-944
- 28: Owen, op.cit. , pp.31-46
- 29: Ibid.
- 30: Ibid. pp.37-39
- 31: Metropolis Local Management Bill [18 Vict], P.P. 1854-~~55~~Vol. IV, p.93
- 32: Ibid. p.94
- 33: See, Chapter III, pp. 161-162

- 34: The Act relieved the poor law Guardians of the responsibility for removal after 1855. See, M. Flinn, "Medical Services Under the New Poor Law." in D. Frazer, The New Poor Law in the 19th-Century, (London, Macmillan, 1976), pp. 49-60.
- 35: For discussion of Sanitary Act 1866 see: Anthony Wohl, Endangered Lives, Public Health in Victorian Britain (London, Dent, 1983), pp.155-158; W.M. Frazer, op.cit. pp.108-111; H. Williams, A Century of Public Health in Britain, 1832-1929 (London, A and C Black, 1932) p. 15, p. 275; Simon, op.cit. pp.285-302; Lambert, op.cit. pp. 380-391, pp.395-397.
- 36: Ibid.
- 37: The Metropolitan Asylums Board was established under the Metropolitan Poor Act, 1867; see, G. Ayers, State Hospitals and the Metropolitan Asylums Board 1867-1930, (London, Wellcome Trust, 1971), pp.17 f
- 38: Ibid. pp.1-6
- 39: Ibid. pp.17-24
- 40: For a discussion of the usefulness of the Torrens and Cross Acts see: Anthony Wohl, The Eternal Slum. Housing and Social Policy in Victorian London. (London, Edward Arnold, 1977), pp.73-108; Enid Gauldie, Cruel Habitations. A History of Working Class Housing 1780-1918. (London, Allen and Unwin 1974.) pp. 265-281; for history of housing, town planning and social policy see: Joseph Melling, Housing, Social Policy and the State (London, Croom Helm, 1980); John Nelson Tarn, "Housing Reform and the Emergence of Town Planning in Britain Before 1914." in Anthony Sutcliffe (ed) The Rise of Modern Urban Planning, 1800-1914 (London, Mansell, 1980), pp.75-99. W.V. Hole, The Housing of the Working Classes in Britain, 1850-1914 (London, Phd Thesis, 1965); John F. J. Sykes, "Public Health and Housing" in the Royal Statistical Society Journal, Vol. XIV.1901, pp. 183-253

- 41: Ibid. Wohl, pp.83-84

- 42: Jeane Brand, Doctors and the State, (Baltimore, Johns Hopkins, 1965), pp.109-113; also, "The Parish Doctor: England's Poor Law Medical Officers and Medical Reform 1870-1900" in Bulletin for the History of Medicine, Vol. XXXV 1961, pp.97-122.

- 43: The necessity for the consolidation of the public health legislation had aroused agitation for reform. See, A.P. Stewart and E. Jenkins, Medical and Legal Aspects of Sanitary Reform (Reprinted by Leicester University Press, with an introduction by M.W.Flinn, 1969)

- 44: Frazer, op.cit. , p. 226

- 45: Sale of Food And Drugs Act (1875), Amendment Act 1891, P.P. 1890-91, Vol. IX, p. 85, Clause I.

- 46: Public Health (London) Law Amendment Bill [54 Vict], P.P. 1890-91, Vol. VIII, pp. 65 ff.

- 47: Infectious Diseases Bill 1889, P.P. 1889, Vol. III, pp. 269-276; see clause 6 for list of notifiable diseases, p.273

- 48: See Chapter III, pp.214-225

- 49: Public Health (London) Law 1891, op.cit. , p.83, clause 30.

- 50: Gauldie, op.cit. , p.285.

- 51: A. Mearns, The Bitter Cry of Outcast London, (London, reprinted with introduction by Anthony Wohl, Leicester University Press, 1970, first published 1883), see pp.11-12.
- 52: Gauldie, op.cit. , pp.286-294; for the effects of later housing legislation in London see, S. Beatie, A Revolution in London Housing. L.C.C. Housing Architects and Their Work, 1893-1914, (London, G.L.C. Press, 1981). see also, J.Roebuck, Urban Development in 19th-Century London (London, Philmore, 1979)
- 53: Anthony Wohl, "Unfit for Human Habitation", in H.J. Dyos, The Victorian City (London, Routledge, Kegan and Paul Ltd. , 1973) Vol. II, pp. 603-624.
- 54: A. Wilkinson, The Beginings of Disease Control in London. The Work of Medical Officers of Health in Three Parishes, (Oxford, D.Phil. Thesis, 1980), passim.
- 55: D.F. Frazer, Urban Politics in Victorian England; The Structure of Politics in Victorian Cities. (London, Macmillan Press, 1979), pp. 11-24
- 56: quoted in Frazer, (1979), op.cit. , p.26
- 57: Ibid. Frazer, pp. 27-54
- 58: Ibid. pp.55-90
- 59: Wilkinson, op.cit. , p.69.
- 60: Ibid. p.70
- 61: Ibid. p. 59
- 62: Jeane Peterson, The Medical Profession in Mid-Victorian England (London, University of California Press, 1978),pp.5-39, pp.40-89; cont.....

- 62: see also, D.Bloor, "The Rise of the General Practitioner in the 19th-Century" in the Journal of the Royal College of General Practice, Vol.28,pp.288-291
- 63: Ivan Waddington, "General Practitioners and Consultants in Early 19th-Century England; The Sociology of an Intra-Professional Conflict" in Woodward and Richards, (ed) Health Care and Popular Medicine in 19th-Century England. (London, Croom Helm, 1977)pp.164-185; see also N and J Parry, The Rise of the Medical Profession (London, Croom Helm, 1976)
- 64: W. H. McMenemey, "Education and the Medical Reform Movement." in F.N.L. Poynter (ed) The Evolution of Medical Education in Britain (Pitman, London, 1966), pp. 135-153.
- 65: Ibid.
- 66: Ibid.
- 67: S.W.F. Holloway, "Medical Education in England 1830-1858. A Sociological Analysis." in History Vol. 49, pp. 299-324
- 68: Ibid.
- 69: Ibid.
- 70: S.W.F. Holloway, "The Apothecaries Act 1815, A Reinterpretation" in Medical History, Vol. 10, pp. 107-129, part II, pp. 221-236.
- 71: Ibid.
- 72: Ibid.
- 73: Ibid.

- 74: McMenemy, op.cit.
- 75: F.N.L. Poynter, "Education and the General Medical Council" in Poynter (ed) op.cit. (1966), pp.195-205
- 76: C.Newman, The Evolution of Medical Education in the 19th-Century (London, Oxford University Press, 1957),pp. 194-264.
- 77: Ibid. pp. 226-227
- 78: Ibid.p.230
- 79: Ibid.pp.243-245
- 80: Poynter, op.cit. p.200
- 81: George Fredrick Samuel Robinson, 1st Marquis of Ripon, (1827-1909), Earl de Grey, governor general of India from 1880, president of council in Gladstone's administration in 1870, see D.N.B. , Vol. 1901-1911, pp.216-221.
- 82: Newman, op.cit. pp. 231-235
- 83: Ibid.
- 84: Report of the Royal Commissioners Appointed to Inquire into the Medical Acts with Evidences, Appendix and Index (H.M.S.O. C.3259-1, 1882)pp.2
- 85: Ibid. pp.4-23
- 86: Ibid. pp.25
- 87: Medical Act 1886 (49 & 50, Vict. Ch. 48)
- 88: A.M. Cooke, A History of the Royal College of Physicians of London (Oxford, Clarendon Press, 1972)pp. 860-886.

- 89: Peterson, op.cit. pp.40-89
- 90: Ibid.
- 91: Ibid. pp.58-59
- 92: See Waddington, op.cit. also, F. Honigsbaum, Division in British Medicine, (New York, St. Martin's Press 1979)
- 93: R. Dudfield, History of the Society of Medical Officers of Health (London, Society of Medical Officers of Health, 1906) pp.1-2 in Public Health, Jubilee Number 1906 .
- 94: There were three officers in 1856 who were Fellows of the Royal College of Physicians with a degree from Cambridge: Septimus Gibbon(1826-1909), M.O.H. Holborn 1855-1894 who took an M.A. and an in 1851; Charles Aldis (1810-1871), M.O.H. Hanover Square 1855-1871, received an M.D. in 1837; Andrew Whyte Barclay, (1811-1894), M.O.H. 1855-1879, received his M.D. in 1852. see, Munks Role, Vol. IV, pp.16-17, pp.62-63
- 95: Wilkinson, op.cit.
- 96: For discussion of significance of the work of Henry Bence-Jones see, Jacob Rosenbloom, "An Appreciation of Henry Bence-Jones" in Annals of Medical History, 2, pp. 262
See also for life of Jones, Henry Bence-Jones M.D. F.R.S. 1813-1873, An Autobiography with Elucidations at Later Dates (London, Crusha and Sons, 1929) 264
- 97: The Lancet 1884, Vol. I, p.872; Munks Roll, Vol. IV, pp.62-63.

- 98: For Summary of Barnes position see, Robert Barnes "On the Relations Between Medicine, Surgery and Obstetrics in London." American Journal of Obstetrics and Diseases of Women and Children, 1884, Vol. XVII, No. 8, pp.1-22. See also, B.M.J. 1907, Vol. I, pp. 1221-1222; The Lancet, 1907, Vol. I, pp. 1465-1469; D.N.B. 1st Supplement, Vol. XXII, pp.100-101.
- 99: The Lancet, 1894, Vol. I, p.715; Plarr's Lives, 1826-1925. pp.556-557.
- 100: Ibid.
- 101: John Burdon- Sanderson, William Pavy and J.L.W. Thudichum, all studied with Claude Bernard during the 1850s: see also "Obituaries" already cited; and D.L. Drabkin, Thudichum, Chemist of the Brain (Philadelphia, University of Pennsylvania Press, 1958) pp. 81-146, for history of Thudichum and his contemporaries; also Lady Burdon Sanderson, Sir John Burdon Sanderson, A Memoir. (Oxford, the Clarendon Press, 1911)
- 102: J.M.C. Olmstead, Claude Bernard Physiologist, (London, Cassell, 1939), pp. 188-207; see also R.Virtanen, Claude Bernard and His Place in the History of Ideas (University of Nebraska Press, 1960) pp. 5-26.
- 103: Fredrick William Pavy, Researches on the Nature and Treatment of Diabetes (London, Churchill, 1869); and "On experimental Glycosuria" in the B.M.J., 1901, Vol. II, p.11.
- 104: The Lancet, 1911, Vol. II, pp.976-980.
- 105: J.L.W. Thudichum, "Experimental Epicrisis of Some Late Researches on Liver Sugar" in B.M.J. 1860, Vol. I, pp.206-208.
- 106: Edwin Lankester, (1814-1874) was a contemporary and associate of Charles Darwin and T.H. Huxley. He was the father of E.Ray Lankester (1847-1929), Linacre

- 106: Professor of Anatomy at Oxford and later Director of the Natural History department at the British Museum, see, The Lancet, 1874, Vol. II, pp. 676-677.
- 107: The Coronership of Middlesex had first been held by a medical man when Thomas Wakley was appointed in 1839; see The Lancet, 1874, Vol. II, pp. 664-665; and S. Squire Sprigge, The Life and Times of Thomas Wakley, (London, Longmans and Green, 1897), p. 377.
- 108: The Lancet, 1874, Vol. II, p. 578.
- 109: Charles Gehart, (1816-1875), D.S.B. Vol. V, pp. 367-375.
- 110: Michael Faraday, (1791-1867). For portraits of his life and work see: J. Agassi, Faraday As A Natural Philosopher (London, Chicago, Chicago University press, 1971); J.G.Cook, Michael Faraday (London, A and C Black, 1963); D.Gunston, Michael Faraday Father of Electricity, Vols I and II (London, Longmans and Green, 1870); and for his work at the Royal Institution see, Maurice Berman, Social Change and Scientific Organisation. The Royal Institution, 1799-1844 (London, Heinemann Educational Books, 1978), pp. 156-186.
- 111: The Lancet, 1921, Vol. I, p. 456.
- 112: J.B. Sanderson, "On the Intimate Pathology of Contagion." in the Twelfth Report of the Medical Officer of the Privy Council with Appendix 1869, (London, Eyre and Spottiswoode, H.M.S.O.), pp. 229-256.
- 113: For account of the Brown Animal Institute see, Stephen Paget, Sir Victor Horsley A Study of His Life and Work, (London, Constable and Co., 1919), pp. 50-53, pp. 78-82. The Institute had many other

- 113: other leading members of the English chemical pathologists and physiologists who completed seminal research during the 1870s and 1880s. See for example the reports of the work carried out by, L.C. Wooldridge, Alan Macfadyean, William Robert Smith, Rupert Boyce, Almroth Wright and Horsley himself in : V.Horsley, "Annual Reports to the Committee of the Brown Institution", 1886-1889, Minutes of the Senate, 1886-1889, University of London.
- 114: Lady Burdon Sanderson, op.cit. p.58, pp.113-123.
- 115: Herbet Mayo (1796-1852) was the first professor of physiology and anatomy at Kings College after it was founded in 1830. Later he founded the Medical School at Middlesex hospital. Druit recorded his contraversial research into the nerves of the face in his, Surgeon's Vade Mecum. See, D.N.B, Vol. 13, pp. 172-173
- 116: Medical Times Gazette, 1883, Vol. I, pp. 600-601.
- 117: The Lancet, 1897, Vol. II, pp. 342-343.
- 118: The Lancet, 1864, Vol. II, p. 226.
- 119: The B.M.J. 1897, Vol. I, p. 941
- 120: The Lancet, 1892, II, p. 1026
- 121: R.Dudfield, op.cit. p.3
- 122; The B.M.J. 1876, Vol.I, p.451
- 123: Ibid.
- 124: The Lancet, 1863, Vol. I, pp.592-593

125: Thomas Orton (1806-1869), M.O.H. Limehouse 1859-1869, The Lancet, 1869, Vol. I, p.312.

126: See, The Medical Directory of London, 1860.

127: *Officers leaving before 1870 and their replacements:

A) Retiring College Fellows and their replacements.

Bloomsbury: Thomas Hunt (died 1857) was replaced by George Buchanan F.R.C.P. (M.O.H. until 1872)

Shoreditch: Robert Barnes (retired from post 1857) was replaced by H.G. Sutton F.R.C.P. (M.O.H. until 1891)

St. Georges

Southwark : William Rendle (retired from post 1860) was replaced by H. Bateson M.D. (M.O.H. until 1879)

Bermondsey: John Challice (died 1863) replaced by William Parker M.D. (M.O.H. until 1873)

Lambeth : William Odling (retired from post 1862) replaced by G. Puckle M.D. (M.O.H. until 1885)

Paddington: J. Burdon-Sanderson (retired from post 1865) replaced by W. Hardwicke M.D. (M.O.H. until 1875)

B) University qualified officers leaving before 1870 and their replacements.

St. Marylebone: R.D. Thompson (died in 1864) replaced by J.W. Whitmore M.D. (M.O.H. until 1880)

Bow : T. Ansell (died 1866) replaced by W.T.G. Woodforde M.D. (M.O.H. until 1908)

127: Officers with minimum qualifications leaving
before 1870 and their replacements.

Plumstead: F.Ward (died 1863) replaced by A.W.
Allinson M.R.C.S./ L.S.A. (M.O.H. until
1870)

Limehouse : A. Cleland (died 1859) replaced by Thomas
Orton M.R.C.S./ L.S.A. (M.O.H. until 1863)

Bethnal S.Pearce (died 1864) replaced by T.Sarvis
Green : M.D. (M.O.H. until 1874)

St.Georges S.R. Pittard (died in 186E replaced by
in the : J. J. Rygate M.D. (M.O.H. until 1885).
East

* Source: The Medical Directory of London, 1857-
1891.

128: Ibid.

129: Ibid.

130: Thomas Ansell, (1798-1866), B.M.J. Vol. II, p. 141

131: No obituary notice exists for Allan Cleland but his
death was recorded in the Medical Directory , 1860.

132: George Buchanan, (1831-1895), D.N.B. Ist Supplement, p.328;
see also, A.L. Smith, A Memoir of the Buchanan Family
(Printed privately at the Aberdeen University Press, 1941)

133: Henry Gawen Sutton, (1828-1891), The Lancet, 1891,
Vol. II, pp. 1408-1409; Sir William Gull (1816-
1890), D.N.B. Vol. VIII, pp. 776-778.

134: William Thomas Garrett Woodforde (1806-1908),
B.M.J. 1908, Vol. I, p. 1272

135: Samuel R. Lovett (1833-1902), The Lancet, 1902,
Vol. I, pp.558-559.

- 136: Thomas Orme Dudfield, (1833-1908), The Lancet.
1908, Vol. II, pp.773-774.
- 137: William Sedgwick Saunders, (1824-1901), The Lancet
1901, I,pp. 292-293.
- 138: Harry Leach (1837-1879), The Lancet, 1901, Vol. I,
p.885
- 139: Public Health, 1926, Vol. 40, pp.275-276
- 140: Steven Novak, "Professionalism and Bureaucracy:
English Doctors and the Victorian Public Health
Administration." in the Journal of Social History,
1973, Vol. 6, pp.440-462
- 141: Woodforde, op.cit.
- 142: Shirley Foster Murphey (1848-1923), Public Health,
1922-1923, Vol. 36, pp.269-270; Plarr's Lives,
Vol. II,pp. 86-87.
- 143: Recruits appointed 1856-1887, holding more than
one post as a Medical Officer of Health during
their career :
- George Buchanan : M.O.H. St. Giles, 1857-1872;
(1831-1895) M.O. Local Government Board,1872-95.
- Shirley Foster : M.O.H. St. Pancras 1879-1888;
Murphey(1848- M.O.H. London County Council,
1923) 1888-1913.
- Edward Seaton : M.O.H. Nottingham,1874-1888;
(1847-1915) M.O.H. Chelsea 1888-1891;
M.O.H. Surrey County,1891-1910.
- M.J. McCormack : M.O.H. Southampton 1873;
(Approx. 1812- M.O.H. Lambeth 1873-1878.
1882)

- 143: C.M. Tidy : Deputy M.O.H. City of London.....1874;
(1843-1892) M.O.H. Islington, 1874-1892.

W.T.G. Wood-: M.O.H. Bow (Poplar), 1866-1873;
forde M.O.H. Berkshire, 1873-1908.
(1827-1908)
- 144: Source: The Medical Directory of England and Wales,
1857-1900.
- 145: Simon, op.cit. pp.419-432
- 146: Local Government (England and Wales) Bill, As Amended
in Committee, [51 and 52 Vict] [Bill 338], P.P. 1888,
Vol. IV, pp.136 ff; see clauses 13 and 14, p.170.
- 147: Medical Directory,op.cit. 1888-1900; James Herron had
been appointed a Medcial Officer for St.Saviour's
Union and was then appointed M.O.H. for the district
in 1890; Sidney Jolly, a Cambridge graduate, had
spent his career in the London Temperance Hospital
since qualifying in 1887, until he was appointed
M.O.H. for Lewisham in 1890; Alfred Harris was
M.O.H. and food analyst for Sunderland Borough before
taking up his post in Islington in 1893; Charles
de l'Brock worked as a certifying factory inspector
before becoming the M.O.H. for Tooting in 1891; George
Milson left his post as Superintendent of the Notting-
ham County Asylum to move to London in 1888 taking
up his post in Newington.
- 148: Thomas Moore (1839-1900). The Lancet, 1900, Vol.II,
p. 912.
- 149: See, Sidney Chave, " The Medical Officer of Health
1847-1974", in Proceedings of the Royal Societ of Medicine
Vol. 67, 1974, pp.1243-1247
- 150: Source: Medical Directory, 1888-1900,op.cit.
- 151: Amongst the thirty-one men appointed as Metropolitan
M.O.H.s after 1888 there were: twenty who were

- 151: members, fellows or office holders in the S.M.O.H.; three members, four fellows, one office holder and one president of the Royal Institute of Public Health; two fellows, and one member of the College of State Medicine; six members and three office holders in the Royal Sanitary Institute; three members and two office holders in the Epidemiology Society; six members of the Societie d'Hygiene Francais. Source: Medical Directory, 1888-1900, op. cit.⁵
- 152: William Corfield (1843-1903), was the first professor of hygiene at University College London. The Chair was created in 1869. He was also M.O.H. of St. Georges district, Hanover Square, from 1873-1899. He became consulting sanitary advisor to the Board of Works in 1899. See, Transactions of the Epidemiological Society, 1903, Vol.XXII, pp.160-163, where his obituary was written by his one-time assistant at U.C.L. Louis Coultman Parkes. See also, the B.M.J. 1903, Vol. I, p.627 and the Lancet, 1903, Vol. I, 778-781.
- 153: Public Health, 1942-1943, Vol. 56, p. 36; The Lancet , 1942, Vol. II, pp.499-500.
- 154: The Lancet, 1925, Vol. I,pp.898-899.

Licensed to Practise: The Diploma of Public
Health, 1868-1911

After 1888 new officers recruited to the Metropolitan Sanitary districts were increasingly qualified with a Diploma in Public Health before taking up their appointment. They appeared to possess a new professional orientation towards preventive medicine in addition to their specialist qualification. What kind of training however was available for a qualification in public health and how well did it prepare candidates for the duties of an M.O.H.? To what extent was its standard of specialism ensured? The meaning of medical licensing qualifications changed according to the educational values which they represented. In the same way the value of the D.P.H. as a licence to practise preventive medicine was determined by the regulation of curricula, rules of study and examination.

The history of the Diploma in Public Health is examined here in three periods. Firstly, from the date of the initial procedural steps taken toward its establishment, in 1868, up to the moment it became a statutory qualification for an M.O.H. Secondly, from 1888-1900 as a period in which its standard of specialization was established. Lastly, the changing status of the curriculum is compared through the content of the examination papers themselves from 1884-1911 and the structure of the courses as they were first instituted in the London Medical Schools and London University.

From the Birth of a Specialism to a Licence to
Practice, 1868-1888.

On June 27th 1868 The General Council for Medical Education and Registration appointed a State Medicine Committee to inquire into the "proper steps to be taken, if any, for granting Diplomas or Certificates of proficiency in State Medicine and for recording the same in the Medical Register."¹ The Committee subsequently conducted a survey of opinion from a selection of correspondents both at home and abroad. Eight questions were asked in the questionnaire and an analysis of the results was reported to the Council in 1869.²

The Committee consisted of eight members and was chaired by Henry Acland, president of the G.M.C. from 1874-1887.³ Some of the leading members of the profession were also on it, George Paget, (president 1869-1874), Edmund Parkes, and Henry Rumsey for example.⁴ The questionnaire was forwarded to twenty-seven British and six European correspondents.⁵ The letter introducing the question stated specifically that they were not intended to "limit the form or extent of your communication" and indeed many added their own views in additional statements.

The questions covered a variety of issues. The first five dealt with the creation of a syllabus and the standard of examination. The final question posited the type of examining body which would be required. Questions six and seven however, concerned a different subject.

These referred to the inefficiencies of medical witnesses and asked for suggestions as to a means of remedying them. The introduction of this topic into the survey reflected the relationship between legal and state medicine which was presumed to exist by the Committee members.⁶

Question 1 listed a series of subjects which could be included in a course for a diploma in State Medicine. The subjects were, forensic medicine, morbid anatomy (Human and comparative), psychological medicine, laws of evidence, preventive medicine, vital and sanitary statistics, medical topography, and portions of engineering science and practice. The correspondents were asked which of these they felt would be appropriate. The response was varied. None thought that all of the subjects were either totally suitable or unsuitable. The majority of replies listed most or some of the subjects and added suggestions of their own, such as; dietetics, vegetable physiology, hydrostatics, chemistry, meteorology, the effects of overcrowding, unwholesome foods, trades, impure water, etc. experimental philosophy, laws of human economy, the principles of inductive and deductive logic, laws of actuary and epidemiology.⁷ Some thought that there should be more than one degree. Robert Baker, an inspector of factories, believed that there should be a separate qualification in the study of toxicology. Lord Chief Justice, Sir William Bovill, suggested that there should be a triadic structure of three classes of degree, each covering different features of the proposed curriculum.

An entirely different idea from Mr W. H. Michael of Temple, who proposed that the curriculum for the M.D. at London University together with a years' experience in a Poor Law Union and practical study of microscopy and chemistry would be of greater value than a diploma course.⁸ John Simon felt that the course of study should be orientated in every individual subject to the practical needs of an efficient health officer, whereas, Edwin Lankester and Henry Maudsley felt that a diploma could be an opportunity for the medical man to study the principles of experimental philosophy and logic. The M.O.H. of Dublin, Dr. Edward Mapother (and member of the General Council) believed that morbid anatomy should definitely not be included, being more appropriately studied "previous to licence". There was only one correspondent who disapproved of a diploma in state medicine altogether, Dr. Douglas Maclagan of Edinburgh.⁹

With regard to the order of study and the time such a course would require, the answers to questions two and three illustrated that there was no fixed opinion. The range of course length suggested was anything between six to thirty-six months.¹⁰ Some replies outlined very specifically defined time tables such as that of Professor Samuel Haughton (member of the General Council) of Trinity, Dublin. He thought that a first year should be devoted entirely to practical study in chemistry, botany, meteorology, actuarial tables and sanitary engineering. A second year to cover medical jurisprudence, pathology, toxicology and epidemiology. At the other extreme, some

believed there should be no fixed order of study at all. John Simon and Dr. C. L. Robertson (of Haywards Heath, Sussex) believed that the order of study, "should be left unreservedly to the candidate's option".¹¹

The important issue of practical instruction was considered in question IV. Seven of the correspondents did not reply to this question but of all those who did every one agreed that practical laboratory study and examination was necessary in a variety of subjects. Some felt that all subjects on the entire curriculum should be taught both theoretically and practically. Edwin Lankester, for example, wrote:

All study of the natural sciences is utterly useless without a practical acquaintance with the facts on which they rest. This should be ascertained by examination. ¹²

As to the standard to which each subject should be taught, the correspondents were generally indecisive. There was however, a much more positive response as to which books they felt would be valuable. The most popular books frequently cited were: Edmund Parkes, Practical Hygiene; Mapother's, Lectures on Public Health; Ambrose Tardieu, Dictionnaire d'Hygiene Publique et Salubrité; Michael Lëvy, Traité d'Hygiene Publique et Priveé; and A. S. Taylor, Treatise on Medical Jurisprudence. There were some more unusual suggestions such as that of Henry Maudsley that Mill's System of Logic, was an essential basic text and Dr. J. A. Symonds, of Clifton, who believed that Neill's Logic, Bain's Psychological Treatises and Lewes's History of Philosophy should be the mainstay of any reading programme in a public health curriculum.¹³

Speculation concerning a court of examiners for a public health diploma was diffuse. A number of correspondents however, agreed that the University of London system would be the most suitable model. The replies considering the issue of medical witnesses were equally speculative but none of them were relevant to the development of a state medicine qualification.

On the basis of the survey the committee recommended that there was an immediate need for a specialised qualification in public health and forensic medicine as preparatory training for health officers. Subsequently, the General Council passed a resolution that,

in any amended Medical Bill which may be prepared for parliament by the Council, it is desirable that the requisite permissive clauses for registering a qualification in State Medicine be inserted in addition to any of the qualifications sanctioned by the Medical Act. 14

The committee was appointed for a further three years. The 1869 report was circulated to the medical licensing bodies during 1870 together with an abstract of replies from the survey. The response was presented in another report to the Council during the following year. The committee received replies from The Royal College of Surgeons (England), University of Oxford, Cambridge, Durham, and Trinity, Dublin, the Faculty of Physicians and Surgeons Glasgow, The Royal College of Physicians Edinburgh and the Apothecaries Hall, Ireland. There was almost a unanimous consensus supporting the Council's resolution to achieve a registrable qualification in State Medicine. In addition to their letters of support some authorities also included reports of their own sub-committees on the subject.¹⁵

The Faculty of Glasgow stressed that the study of state medicine would by necessity have to constitute an additional year to that of the existing five year period of a medical licence. They were the first to point out that candidates for such a diploma should be in possession of a medical licence before starting post-graduate study. For this reason the Faculty believed that subjects which formed part of the undergraduate curriculum in medicine or veterinary qualifications should be omitted from any public health diploma. The post-graduate course should concentrate alternatively on forensic medicine, (advanced and toxicological reporting); psychological medicine; preventive medicine, "in relation to air, water, food, heating, draining, trades etc."; and medical statistics, topography, meteorology and epidemiology.¹⁶ They felt the diploma would have a secondary function, namely, to qualify men for "offices of medical police or jurisprudence or treatment of the insane." The functions of medical witnesses, i.e. insurance referees etc. policing, (presumably inspection of factories, offensive trades, nuisances etc.) and surveillance of the insane were clearly connected under the umbrella of state medicine in the Faculty's schema.

The Medical Questions Syndicate of the University of Cambridge felt that defining the parameters of the term "state medicine" was problematic. From the Survey they assumed that the term

comprehends Forensic Medicine and Sanitary Science as applied to the Community at large, and therefore includes all the details of Vital and Sanitary Statistics, Medical Topography, Preventive Medicine, Psychological Medicine etc. ¹⁷

The Syndicate described these topics as being scientifically extended to the point of being impossible to include in the ordinary curriculum for a medical licence or degree. They supported the idea of a separate registrable qualification therefore but remained uncertain as to the conditions under which it could be instituted. A prerequisite would be, in their view, the creation of a new department and professorship. The candidates for a diploma in state medicine should possess an M.B. and, they believed, serve at least six months practical training in the administration of a Lunatic Asylum and attendance as a Medical Officer for the Poor Law.

Trinity College, Dublin used a similar definition of state medicine to that of Cambridge, but were definite about the structure of a diploma. They preferred the idea of splitting the qualification into two levels; a higher degree, equivalent to an M.D. consisting of three years study to qualify, "Experts and Medical Assessors", and a second course, lasting only 18 months leading to a certificate for Health Officers, Inspectors and Coroners. However, Trinity remained confused as to how the curriculum should be arranged for each level of the diploma and which preconditions for entry to either course should be set.¹⁸

The most controversial communication to the G.M.C. in 1870 however, came from the Royal College of Physicians of Edinburgh.¹⁹ The Corporation recognised the importance of state medicine but seriously doubted the wisdom of creating examinations for medical men "in branches of study

belonging to another profession, and so far removed from ordinary medical practice as engineering science, as recommended by some, or the construction of actuarial tables and formulae, as suggested by others." This was asking medical men to overstep the boundaries of their profession which would in turn invite other professions to do the same. For example, they pointed out that general practitioners would be totally opposed to a class of engineers, qualified in various aspects of public health, suddenly being imposed upon their territory. The Edinburgh physicians believed that the suggestions of Maudsley and Lankester that medical men required training in philosophical logic to improve their performance as medical witnesses, was an improper innuendo regarding the existing licensing qualifications. On the contrary, the Corporation felt that the medical practitioner was already sufficiently qualified to perform this duty and that of a public health officer "since they did not differ so widely from those which every practitioner is discharging to those families for whom he acts as a health officer." Further, they objected to the G.M.C. creating a new single registrable qualification in state medicine when it was seeking to abolish such "singular qualifications" for general practice. The Corporation also rejected the working definition of "state medicine" which resulted from the Survey, but they did not state why. The G.M.C. should not, in their view, be doing anything to "encourage specialism" when there were already too many qualifications entered on the register and moreover should not "draw an

invidious distinction between universities and other corporations" by giving the former a free licence to create new degrees while strictly limiting the latter to the boundaries of their charters.²⁰

This was not of course an isolated view of the general relationship between the universities, the medical corporations and the G.M.C.²¹ Nor was it the last time that any of the corporations were to conflict with the aims of the G.M.C. over education in state medicine. However, Edinburgh's total opposition to the idea of a registrable certificate did not receive support from any other quarter. Events ran ahead of the issue and Trinity established the first Diploma in State Medicine in 1871.²² In England the first certificate was set up in Cambridge, "by grace of the Senate", on February 4th, 1875. The original title of the Cambridge degree was the Certificate in Sanitary Science.²³ The following year, in 1876, a similar certificate was instituted by the University of London Senate. Durham followed London in 1879 with a statement in its calendar for that year, that,

in recognition of the importance that M.O.H.'s or those seeing appointments as such should possess a proof of their special acquirements have instituted Examinations in State Medicine by which the successful candidates will be entitled to receive a certificate of proficiency in sanitary science. ²⁴

The English Corporations began to institute examinations in 1882 when the Royal College of Physicians of London created a new certificate in hygiene which after 1884 became the Diploma in Public Health of the Conjoint

Examining Board.²⁵ The Scottish Universities and Corporations, despite initial opposition from the Edinburgh College of Physicians, established sanitary certificates during this period and by 1886 there were, altogether fourteen different licensing bodies providing qualifications in state medicine and public health.²⁶

Regulations, rules of study and curriculum structure differed widely between the licensing bodies. For example, in London (either at the University or the Conjoint Board) candidates could not enter the examinations unless they had been registered practitioners for at least one year or, in the case of the Board, they were at least 23 years old when taking part I and 24 when taking part II. The candidate could only therefore, obtain his diploma after completing his medical licensing examinations first.²⁷ This was not the case universally. In Durham for example, candidates could take the state medicine qualification before sitting the final examinations of the medical licence. This was also possible at the Glasgow Faculty and at all the Irish Licensing Boards.²⁸ The English Conjoint Board had an interval of six months between parts I and II of the diplomas but elsewhere two part examinations, such as those at Cambridge, could be taken simultaneously which resulted in candidates who failed the first part being allowed to enter the second.²⁹

The original curricula of the various licensing authorities incorporated most of the subjects outlined in the 1869 G.M.C. report. The Cambridge examination gave

considerable attention to the practical study of Physics and Chemistry in relation to public health analysis. Skill at microscopical analysis of air, water and food was examined in Part I along with written and oral questions on the laws of heat, pneumatics, hydrostatics and hydraulics with special reference to ventilation, water supply, drainage, construction of dwellings and the disposal of sewage. Sanitary engineering was also included. Part II examined subjects which had been included in the 1869 report under the term "preventive medicine"; the origin, propagation, pathology and prevention of epidemic diseases, and the effects of overcrowding, unhealthy occupations and nuisances on health. Vital statistics, sanitary law and meteorology in relation to the distribution of disease was also included in the Cambridge curriculum.³⁰

The directions of the 1869 report were also generally followed in the curriculum of the London university certificate. Chemistry and microscopy were given a similar, vocational orientation and they together with the topics of meteorology and geology were taught, "as far as they bear on the duties of Health Officers."³¹ The London curriculum provided more detailed statistical study including the preparation and calculation of community disease rates in addition to analysis of local mortality rates. Preventive medicine included an almost identical list of topics as that of Cambridge and sanitary engineering was given the same amount of attention also. Sanitary jurisprudence was given a rather different emphasis however.

At London not only the sanitary acts but also their application in terms of the everyday duties of an M.O.H. were covered. The whole subject was expanded even further by concentrating on the instructions of the Local Government Board to district officers and the procedures for carrying them out.³²

In these earliest curricula the educational goals of a diploma in state medicine had become increasingly clarified beyond the definition initially provided in the 1869 G.M.C. report. The relationship between legal and preventive medicine had changed. The '69 report had envisaged the function of forensic studies and medical jurisprudence as a means to create a new class of medical witness. 'Parliamentary legislation' in both the curricula of London and Cambridge however was given a vocational and practical orientation toward the duties of a district sanitary office only. Forensic medicine was given much less emphasis than chemistry and microscopy in relation to the work of a public food and gas analyst.

While more courses and certificates were being set up throughout the 1870s the 1875 Public Health Act created a vast new number of posts for qualified officers to fill.³³ Meanwhile, the issue of the reform of medical licensing became a more pressing one. The Medical Act of 1886 however, resulted not only in creating a new system of registration for curative medicine but realised the aims of the G.M.C. with regard to the practice of state medicine.

Under clause 21 of the Act,

every registered medical practitioner to whom a diploma for proficiency in sanitary science, public health or state medicine has after special examination been granted by any college or faculty of physicians or surgeons or university in the United Kingdom or by any bodies acting in combination, shall if such a diploma appears to the Privy Council or to the General Council to deserve recognition in the Medical Register be entitled on payment of such a fee as the General Council may appoint to have such a diploma entered upon the said register. ³⁴

Within two decades of this specialism having been created the post-graduate diploma in preventive medicine became the first and last such qualification to be registrable. The "Association of Medical Practitioners Qualified in Sanitary Science" obtained their objective, "to maintain their status in contact with Sanitary Inspectors" with enviable early success.³⁵ The registrable status of the D.P.H. was a prerequisite condition to a new "licence to practise". Together with the clauses of the 1888 Local Government Act creating exclusive appointment of only qualified officers, the Medical Act of 1886 provided a legislative basis for a new professionalism. The licence was to practise medical "prevention" rather than cure, and the emergent professional was physician to the community rather than the individual.

The 1886 Act renewed the power of the G.M.C. to apply to the Privy Council for the removal of unsatisfactory qualifications from the register. As has already been pointed out, this power had never been used under the 1858 legislation. It proved however, to play a much greater role in the control of licences in preventive medicine

than it had done in the development of qualifications for general practice.

Regulation of Examination Standard and Rules of Study, 1889-1900

In 1889 the General Council instructed its Education Committee to investigate the regulations of the licensing authorities with regard to their public health certificates. The Committee reported to the Council with a table representing a survey of the conditions of entry to the public health examinations of the fourteen authorities who offered them.³⁶ The table illustrated many discrepancies between authorities. Only six ensured that candidates already possessed a medical licence. Some universities allowed their regulations to be suspended for their own graduates. None of those authorities offering two part examinations required candidates to pass the first before entering the second. The lack of uniformity of regulations left the post-graduate status of the diploma in jeopardy. The education committees reported that the situation could not be allowed to continue given the importance which the D.P.H. had acquired.

The possession of a diploma in state medicine must therefore be held to imply higher and special qualification and it must be for the public interest that all such Diplomas should really signify what they appear to signify." 37

This opinion had been previously represented to the Council before the submission of the 1889 report.

Throughout 1887 and '88 the Public Health Medical Society had pressed the General Council for reforms.³⁸ The Society was founded by William Robert Smith at the time when he was working at the College of State Medicine. When the College was incorporated into the Lister Institute in 1892, Smith replaced the Public Health Society with a new organization which eventually received a Royal charter and became the Royal Institute of Public Health. In a letter to the General Council, of November 21, 1887, The Society attempted to draw attention to the great variation in regulations between licensing authorities. They recommended that a two part examination should be made compulsory and that no unqualified candidate should be allowed to enter the final part. To do otherwise, they pointed out, would be to contravene the 1886 Act. The major concern of the Society was that the Diploma,

should indicate more than an ordinary acquaintance with the principles of Hygiene and they would venture to remind the members of the General Medical Council that while a knowledge of Public Health is required for candidates for the ordinary medical qualifications and is provided for the Forensic Medicine examinations, a Diploma in Public Health should imply more. ³⁹

They went on to specify that the Diploma should represent in the department of hygiene, the standard of achievement indicated by the M.R.C.P. in medicine or the F.R.C.S. in surgery or the M.D. of a university. The correspondence to the Council from the Society was always signed either by William Smith himself or, the Chairman of its Council, C.E. Saunders.⁴⁰

The Education Committee used the communications of the Public Health Society to test out opinion amongst the licensing authorities. It circulated their letter of the

21st and recorded the replies.⁴¹ The reactions from the authorities were mixed. It meant however that the Council was able to test out the possibility of reforming the regulations before deciding on what action to take. What followed however went far beyond anything the licensing authorities could have expected.

At a meeting of the 31st May 1889, the Council debated a second report by the Education Committee which listed a series of reforms to ensure uniform regulation of the D.P.H. The Committee proposed that the regulations should be imposed upon the licensing bodies through an order, failure to comply with which would disenfranchise any qualification from election to the medical register. The regulations were entered into the Minutes on the 1st June together with a preliminary statement asserting the legitimate authority of the Council under clause 21 of the 1886 Act, not to consider Diplomas,

to deserve recognition in the Medical Register unless they have been granted under such conditions of education and examination as to ensure (in the judgement of the Council) the possession of a distinctively high proficiency, scientific and practical and that in forming its judgement on the conditions of education and examination will expect the following rules to have been observed. ⁴²

The eight rules which followed specified the age, qualification, compulsory level of practical laboratory and sanitary work and rules of study and examination for candidates of the diploma.⁴³ The resolution of June 1st was issued as an order of the Council to all authorities

offering examinations in state medicine on June 19th, 1889.

The G.M.C. for the first time was using its power of "sanction" under the Medical Act rather than a policy of "suasion" to impose uniformity upon medical examinations. Before issuing the order they had consulted their counsel, Mr Muir Mackenzie, on the legal status of their action. Mackenzie reported that the Act did not in itself require a candidate to conform to any specific conditions, such as that of being fully qualified by the time he entered the final part of a diploma in public. However, the wording of clause 21 did establish the unequivocal right of the G.M.C. to issue criteria for discriminating between certificates which deserved recognition on the medical register.⁴⁴

The order was issued with a demand for the licensing authorities to return their amended regulations for inspection and approval by the General Council. It met with mixed response. Universities of Oxford, Cambridge, Durham and the Royal College of Physicians Edinburgh agreed to comply without comment. The University of Edinburgh agreed generally to the order but objected to the limited amount of practical work required for the curriculum. They pointed out that weaknesses in the regulations would still leave them open to abuse. The Science Degrees Committee of the University suggested that men in general practice often intended to add a D.P.H. to their qualifications but found the major difficulty was attending a laboratory for a sufficient amount of time. Six months'

work was subsequently interpreted as meaning an occasional half-hour visit two or three times a week. Therefore, Edinburgh suggested that a limit to the minimum weekly attendance in a laboratory should be set.⁴⁵ Of the other Scottish authorities, the Universities of Glasgow and Aberdeen were unable to comply with the new regulations and the Faculty of Physicians at Glasgow adopted them but stated they would have difficulty in achieving the required amount of outdoor instruction for their candidates in a sanitary office.⁴⁶ The Irish Authorities pointed out the great difficulties which they would experience also in complying with the new rules. Samuel Haughton, the professor of Hygiene at Trinity and long standing member of the G.M.C. had objected to the proposal of the regulations from the beginning. He had suggested that a procedure of inspection should be adopted instead, as was the case for all other professional examinations.⁴⁷ Once the G.M.C. order had been issued he summoned a conference of the Irish licensing authorities to discuss the full implications for them. The conference sent a collective statement to the G.M.C. summarising the resolutions at which it had arrived. They wished to institute a two-tiered system along the lines initially proposed by Trinity College in 1870.⁴⁸ The need for a two-tiered system for Ireland was emphasized even further at a later date when in 1890 the General Council received a memorial from a group of unqualified assistants who acted as part-time M.O.H.'s in small, rural Irish districts. Their memo was a plea for a qualification to be created which would

acknowledge their practical experience in the field and prevent them from being dismissed from their appointments in favour of qualified men. These "humble petitioners" were supported by the Royal University of Ireland which pointed out the extremely low stipend of many of the posts held by such assistants. The salary, in the view of the University could not justify the level of qualification being required by the G.M.C.⁴⁹

From London there were different complications. Firstly, the University had dropped its certificate in State Medicine earlier in 1889 and replaced it with an M.D. in state medicine, granted through the submission of a thesis. The Public Health Medical Society had written to the G.M.C. on May 7th to protest at the action of the London University and demanded that the M.D. should not be given recognition on the medical register.⁵⁰ In reply to the G.M.C. order in June, the University Senate claimed to have brought the regulations of their M.D. into line. The thesis constituted only a portion of the examination for the degree and there were still oral and written examinations in psychological medicine.⁵¹

The strongest reaction to the G.M.C.'s order however came from the English Conjoint Board. The College of Physicians protested to the General Council concerning its "unprecedented action" of attempting to create a state regulated medical degree. The College did not disagree with any of the regulations issued on June 1st but was totally opposed to the principle involved. The use of the

sanctioning authority of the Privy Council was in their view coercing the licensing authorities into a State qualification in public health. The Conjoint Board subsequently took legal advice on the position of the G.M.C. but discovered that there was no clear case for opposing the order. The counsel of the Board advised both Royal Colleges to accept and adopt the regulations without making it a test case for the Privy Council's power of veto. However, individual members of the Royal College of Physicians namely Drs. Edward Liveing, William Ord and Norman Moore all recorded their disapproval of the G.M.C.'s action.⁵² The Colleges conceded that there was no prospect of a repetition of such an order and in view of the fact that the regulations were acceptable to them decided to comply.⁵³

The issue of the regulations did not prevent disputes over the standards of the D.P.H. but encouraged them. In-fighting amongst the Scottish authorities for example required intervention of the G.M.C. to resolve. In 1890 a memorial was sent to the Council by "members of the profession in Glasgow and West of Scotland", led by John Glaister, professor of medical jurisprudence at St. Mungo's, and John McVail, M.O.H. for Stirling and president of the Sanitary Association of Scotland, later president of the Society of Medical Officers of Health.⁵⁴ The letter complained of the insufficient and unsatisfactory examinations of the diploma in public health at Glasgow University. During 1889 the University granted 55 certificates, which constituted almost 17% of the entire total of state medicine certificates granted by all

licensing authorities throughout Scotland between 1871-1887, including the science degrees in public health granted at Edinburgh. Glaister and co. suggested that these figures spoke for themselves. Fifty-seven candidates had entered for the Glasgow certificate and fifty-five passed, that gave them a pass ratio, which compared with the Scottish average, indicated a fraudulent examination standard.⁵⁵ The examinations were criticized on a number of other accounts by the memorialists, including the fact that at least sixteen candidates had entered who had not passed their medical qualifying exams, four were under age to take an M.B. and two had taken it and failed. Glaister demanded an enquiry and the removal of Glasgow certificates from the register. The Public Health Medical Society caught wind of the Glasgow scandal and supported these demands fully.⁵⁶

The University was not threatened immediately however and wrote a long report explaining the circumstances of the 1889 examinations. They rejected the idea of an enquiry claiming it would be beyond the constitutional mandate of the G.M.C. and suggested, alternatively, that an inspector be appointed which was the normal procedure of assessment of examination standard.

The G.M.C. ignored this argument however and went ahead with an enquiry, setting up a special committee to investigate Glaister's accusations. The Committee was chaired by Sir Walter Foster and included Sir Dyce Duckworth, Brudenell Carter, Samuel Haughton and Dr. Struthers.

It reported on June 2nd 1890 and found the examinations at Glasgow to be entirely insufficient. On June 6th Foster forwarded a motion that the G.M.C. should report the Glasgow case to the Privy Council with a view to remove its certificate in state medicine from the medical register. Thus the case became the first measurement of the G.M.C.'s intentions with regard to their Order of 1889. In the statement which Foster issued to the Privy Council, he cited the terms under which Glasgow was to be disenfranchised as "the resolution of June 1st 1889" specifically. The final outcome of the sanction of the Privy Council was that Glasgow restructured its Diploma in order to regain registrable status. Once in line with the G.M.C.'s regulations, they subsequently re-examined the fifty-five candidates from 1889 in November 1890. The result of the re-examination was a total of four passes.⁵⁷

The Glasgow case strengthened the position of the G.M.C. considerably and the licensing authorities became more stringent in enforcing the rules of the Diploma. Standards continued to be monitored also through inspection. In order to co-ordinate the work of supervising the development of the D.P.H. the General Council set up a Public Health Committee in 1894 which produced its first report in 1895, this most detailed examination of the various curricula and examination content yet accomplished was three hundred pages in length covering

the diplomas of all fifteen licensing bodies, which now included Victoria University.⁵⁸ The Public Health Committee was chaired by Richard Thorne - Thorne and appointed G.F. Duffy as its inspector.

The central conclusion of the report was that, despite the adoption of the 1889 regulations, the standard of examination and curriculum . still varied widely between authorities. As might be expected the English Conjoint Board, Cambridge and the University of Edinburgh were found to have the highest standards on all accounts. Some serious inconsistencies in assessment procedures were found at Durham. London University still presented problems with their M.D. in state medicine. All other bodies fell below the required standard of excellence and were deemed unsatisfactory.⁵⁹

Duffy felt that he was observing extreme contrasts. London University at one end of the spectrum where the knowledge required of a candidate was extremely narrow. At the other end, Edinburgh's B.Sc. in public health "went beyond anything needed by an M.O.H.". One of the questions from the first examination of the latter, asked the candidate to "Show how the mass of Jupiter can be compared to that of the Earth."⁶⁰

One major common defect was that the nature of assessment altered in a number of licensing bodies according to whether the candidate was senior or not. Durham for example, gave different terms to graduates of its own medical school. Another fault was that ignorance

in one subject was compensated for in some marking systems by greater knowledge in another. At Victoria University candidates who scored poor failures in some parts of the examination still obtained a diploma from high passes elsewhere. Duffy felt that not enough importance was attached to the oral examination by any of the authorities and all of them allowed an insufficient time span to lapse between parts I and II of a two part diploma. Practical bacteriology had been almost completely ignored which he felt was insupportable because "since these exams were first instituted, Bacteriology has come to occupy a position of great importance".⁶¹ Equally there was no provision in any diploma course for clinical experience in hospitals for infectious diseases which Duffy felt should be universally compulsory together with examinations in the outdoor work of an M.O.H.

There were some authorities included in the report which did not come under any close scrutiny since they no longer had any candidates for their examinations. This was the case for Oxford, and the majority of the Irish authorities. Trinity had only two candidates for their diploma in 1894 and both failed which led Duffy to report that standards were being maintained even though numbers were few.⁶² The ratio of successful candidates at the best authorities was about 56%. During 1894 the English Conjoint Board examined 25 candidates in part I with 14 passes. At the second exam 22 candidates entered and 13 passed. This was the only authority

Duffy's opinion of the Board was that it was "excellent and painstaking", but he regretted that it did not include practical exams in bacteriology and clinical work. The Board remedied the former immediately but took longer to deal with the second point.⁶³ At Cambridge the figures were similar but at Edinburgh although the standard ranked amongst the highest in the report there were only two candidates for the Diploma in 1894.⁶⁴

Duffy's report revealed that the 1889 Order was open to a variety of interpretations which still prevented the realisation of a uniform standard of excellence which it had been intended to achieve. The Public Health Committee spent the following two years therefore investigating the most serious weaknesses and their remedies. In an Interim Report, in 1898, the committee concluded that the greatest failure of interpretation lay in the requirement of outdoor work in the various curricula of the licensing authorities.⁶⁵ It was also the key to obtaining the control over the D.P.H. which the G.M.C. was aiming for.

In June 1896 the G.M.C. had added a clause to the Order of 1889 in recognition of Duffy's recommendations concerning compulsory practical examinations. The new clause required the candidate to show evidence that during a period of six months after having obtained a registrable qualification, he "had practically studied the duties of outdoor work under a Medical Officer of Health." This was an attempt by the G.M.C. to ensure

that some level of practical experience of health work was gained by newly qualified men before they took up an appointment. It was intended that this period of out-door work should be completed separately from a period of laboratory instructions. Without such practical instruction the newly qualified officer would have less knowledge of sanitary inspection than the inspectors working under his authority in a district health department. The aim was that 12 months should lapse between qualifying as a medical practitioner and taking the diploma in public health during which, in addition to the theoretical courses, candidates should have spent six months in a laboratory and six months in a district health office.⁶⁶

Having surveyed the curricula of all the licensing authorities however the Public Health Committee discovered that

there exists an almost entire absence of uniformity as regards the interpretation which the different licensing bodies place upon the regulation of the Council adopted on June 9th 1896. ⁶⁷

The Interim Report showed that in nearly all cases the periods of out-door work and laboratory instructions overlapped, and most authorities cited great practical difficulties in obtaining experience in a district health office for their candidates altogether. In 1899 therefore the Public Health Committee attempted to discover precisely what these difficulties

were. They issued a questionnaire to a sample of 170 M.O.H.'s throughout the Kingdom asking their opinions as to the practical obstacles and advantages of providing out-door instruction in their district offices to candidates for the D.P.H. The Committee had a total of 131 replies to their questionnaire providing them with substantial analysis of the existing system.

Response to the questionnaire provided an important new insight into the issue. To begin with there was a fundamental division of opinion between the M.O.H.'s regarding the G.M.C.'s rules concerning out-door instruction.⁶⁸ Part-time officers almost unanimously replied that they believed the rule to be practical, easy to implement and with sufficient officers available to fulfil the tuition needs of the authorities. Full-time M.O.H.'s however held a contrary view. The responsibility for out-door tuition, the G.M.C. had intended to rest with full-time officers. Their full-time status however allowed their sanitary authorities the right to refuse to allow them to undertake tuition of candidates. Those officers pointed out that there was a general policy amongst their employers to prevent them taking students but even those who wavered this policy, on the grounds of benefiting the community, did so only if the M.O.H. agreed not to receive tuition fees. Under these conditions there was a great shortage of supply of full-time officers to undertake this instruction. As a result pupils were taken on by part-time officers but were simply left to

follow the Sanitary Inspector around and pick up information where they could. Those who were taken on by a full-time officer did not receive tuition through observation of the everyday work of the department but in occasional classes given by him when he had special inspections of a slaughter-house or common lodging houses and sewage works etc. For these reasons the full-time officers believed that the six month out-door tuition period as it was presently conducted was "a farce".⁶⁹

A further contentious issue which emerged from the analysis of the questionnaire replies was the financial burden on candidates. The educational status of the D.P.H. was equivalent to an M.D. or F.R.C.S. It was in addition however an exclusive licence to practice a profession which the other post-graduate medical qualifications were not. A majority of M.O.H.'s believed that fees for out-door tuition were entirely justified for candidates intending to use the D.P.H. to enter the Public Health service. However, a number of correspondents pointed out to the Committee that a number of candidates took the diploma who did not take up public health appointments and that in these circumstances the burden of fees was excessive.⁷⁰

The last point illustrated the central issue which had resulted in the variation not only of the G.M.C.'s rule regarding out-door work but ultimately in the interpretation of the 1889 Order as a whole.

Firstly, the interpretation of "out-door" work had come to mean, in the context of the partial level of instruction currently being undertaken, simply the visiting and inspection work of a sanitary department. This was contrary to the G.M.C.'s original intention, which was that the six month period should be spent not simply in the work of the M.O.H. "out-door", but in observing "every phase of the work of a Health Officer which has to do with the efficient performance of his duties within his sanitary district."⁷¹ The reason why this interpretation had become so impractical was that there were by 1891 about 200-250 candidates taking the Diploma, for whom there was an entirely insufficient amount of full-time officers for tuition.⁷² A great bulk of this number however were candidates who were not newly qualified medical men but general practitioners taking the D.P.H. in their spare time. A number of them were part-time M.O.H.'s already in small rural districts. They were keen to take the Diploma in order to ensure they remained eligible for re-election to their appointment should their district be combined with another, enabling it to employ a full-time, and fully qualified officer.⁷³ There was a dominant opinion amongst those respondents to the Committee's questionnaire who considered the interpretation of the 1889 Order impractical that the level of general practitioners entering for the Diploma was the cause of variations amongst the licensing authorities. In order, for example, for the out-door instruction clause to be interpreted in its original intention by the G.M.C. the licensing authorities would

have to sacrifice numbers of candidates and discourage general practitioners from taking the diploma who had no serious interest in a career in the Public Health service. The Committee concurred with this opinion expressed by a number of respondents to its questionnaire and recommended to the Council that if the out-door instruction clause, and indeed the entire 1889 Order,, was to be interpreted in their original form the number of candidates for the Diploma would have to be reduced in this way. The alternative could only be sacrificing the standard of tuition instead, which in the Committee's view "should not be lowered merely to facilitate the obtaining of the Diploma by other practitioners, not having that aim, (of entering the Public Health service) in view."⁷⁴

Revision of the Rules of Study was debated by the G.M.C. throughout the year following the Public Health Committee's report on their questionnaire in 1899. Eventually a new Order of Rules were entered into the Minutes of the General Council and issued to the licensing authorities on December 5th 1900. There were now four regulations with major revisions to rules 3 and 4. Rule I still required a twelve month period to have elapsed between the attainment of a qualification in medicine, surgery and midwifery and the admission of a candidate to any part of an examination for a Diploma in Public Health. Rule II required every candidate to produce a certificate of evidence of having attended during six months practical instruction in Chemistry, Bacteriology and the Pathology

of diseases of animals transmissible to man at an approved laboratory. Rule III specified that a similar certificate was required of the candidate providing evidence of his having studied "during six months of which at least three months shall be distinct and separate from the period devoted to laboratory work... day to day in the duty, routine and special, of Public Health administration under the supervision of:-"⁷⁵ There followed three qualifying clauses to Rule III which specified precisely the conditions under which out-door tuition would be valid for examination by the English, Scottish and Irish authorities. In England and Wales tuition was recognised under a Medical Officer of Health of a County or single sanitary district of a population of over 50,000 or an M.O.H. giving his whole time to public health work.⁷⁶ In Scotland and Ireland out-door instruction could only be given by either a County M.O.H. or one from a district of over 30,000. Tuition by an M.O.H. who also held a teaching post in a recognised medical school or university public health course could also qualify in any area of the Kingdom. A final and entirely new rule, Rule IV, required candidates to complete a three month period in a Hospital for Infectious Diseases studying "methods of administration" as a compulsory feature of their diploma.⁷⁷

By the 1880s an uneven standard of excellence in examinations in state medicine had resulted from the

entrepreneurial competition amongst licensing authorities for candidates and their fees. The significance of the D.P.H. as an exclusive licence of entry into a career in the public health service increased the number of candidates and exacerbated the sacrifice of standards in order to accommodate numbers. The aim of the G.M.C. after the 1886 Medical Act was to ensure the educational value of the D.P.H. as equivalent to that of the M.D. or F.R.C.S. This led to the unprecedented use of the direct sanctioning power of the Privy Council to institute a, virtually, state regulated post-graduate medical examination. Centralised control of the D.P.H. enabled the G.M.C. to monitor its development more closely and eliminate any ambiguity of purpose to the qualification. The reduction of numbers ensured not only that standards were maintained but also that candidates for the diploma were restricted to those seeking a career in preventive medicine specifically. The level of specialisation was ensured through the revised rules of 1900 which imposed too high a penalty, both educationally and financially, upon candidates taking the qualification with no intention of entering the profession as to render it not worth their while. In 1901 the total number of Diplomas granted by all licensing bodies were 104 which was less than half the number of 254 which had been issued in 1899.⁷⁸ The revised regulations of 1900 had the desired aim of eliminating the general practitioner as a candidate

making the D.P.H. a professional qualification of practice in preventive medicine.

The Diploma of Public Health in London: Courses and Curricula, 1890-1907

The first lectureship in Public Health was established at St. Thomas's Hospital where a course of lectures were included in the medical curriculum in 1856.⁷⁹ The lecturer appointed was Dr. Edward Headlam Greenhow (1814-1888)⁸⁰ Greenhow continued to provide this series at St. Thomas's until 1861 when he took up an appointment as Physician at Middlesex Hospital and subsequently created a new lecture course there.⁸¹ The appointment of individual lecturer in hygiene and public health continued slowly in the London hospital medical schools as the subjects became integrated into the final year's study for the pass examinations of the licensing authorities for undergraduate medical students.

The organisation of teaching for the post-graduate diploma developed incrementally. The precise date as to when many of the London Medical Schools began special classes and courses for the D.P.H. is difficult to determine. The establishment of lectureship and public health courses for undergraduate examinations did provide a basis for teaching individual features of the D.P.H. curriculum, however, at schools such as St. Thomas's, Middlesex and Westminster.⁸² In 1894 Charing Cross Hospital Medical School and St. Mary's Paddington were advertising their "special classes" and "practical instruction"

given for the examinations of the Conjoint Board, in public health. At Charing Cross the teaching of Hygiene and Public Health was divided between Drs. Arkle, Foster-Morley (who also taught toxicology and physics at the school) and Arthur Whitlegge, (later M.O.H. for Nottingham) who taught the practical course.⁸³ At St. Mary's practical instruction in hygiene was given by the lecturer in medical jurisprudence, Dr. Luff.⁸⁴ Guy's medical school specified that they offered classes for students preparing for the examinations of the universities of Oxford and Cambridge as well as the London authorities and "other higher examinations". Whether their lecturer in hygiene, George Turner, provided instruction for the D.P.H. as one of those higher examinations, however, was not clear.⁸⁵

The lead toward establishing a complete post-graduate curriculum was taken by the University of London itself. William Corfield was appointed professor of hygiene for University College in 1869. By 1875 the importance of his department had grown to the extent that he was able to establish the first hygiene laboratory in London. Teaching in public health expanded considerably with the development of the new University College Hospital after 1900.⁸⁶ The Pathology department at the College had expanded its research activities throughout the 1890s under the direction firstly of Victor Horsley (director 1887-1896) and later Vaughen Harley (director from 1896).⁸⁷ Horsley established experimental, chemical pathology. at the laboratory in opposition to old conceptions of pathology as morbid anatomy.⁸⁸ He encouraged the development

of bacteriological research, which was undertaken until 1892 by Rupert Boyce, assistant to the department and later professor of bacteriology at Liverpool.⁸⁹ In the new hospital the pathology department was greatly extended and Corfield along with Dr. N. Nabarrow were appointed its bacteriologists. Although Corfield died in 1903, the new medical school, opened 1907, provided practical instruction in bacteriology in the pathology department "especially designed for Diploma Work" by Nabarrow and his assistant A. C. Stevenson, D.P.H.. Corfield was succeeded as professor of hygiene by Henry Kenwood, M.O.H. and public analyst for Stoke Newington. During 1907 his department had thirteen successful candidates in the D.P.H. examinations of Cambridge and the Conjoint Board.⁹⁰

The departmental liason at U.C.H. was copied by other medical schools in London after their incorporation into the University in 1907.⁹¹ At Westminster for example the members of the pathology department ran special courses for students from the Public Health department. Bacteriologist, Julius Bernstein, taught a basic course of lectures and demonstrations in the Public Health department during the summer session and later in the year ran an advanced course in bacteriology for D.P.H. students in the pathology laboratory. A complete curriculum for the D.P.H. was available at Westminster after 1907 consisting of four courses: a series of eight lectures on public health given by Samuel Monkton - Copeman, (Medical Inspector to the Local Government Board)

director of the department; the Bernstein lectures on bacteriology in relation to public health; a series of lectures and demonstrations in hygienic chemistry given by H. Wilson Hake a toxicologist; and a course of lectures in physics by Charles Fox.⁹²

At Middlesex Hospital Medical School they were "fully equipped for the theoretical and practical teaching of all the subjects of the Medical Curriculum and for the Diploma in Public Health", after 1907.⁹³ This included a unique facility in London at this time, a bacteriology and public health laboratory exclusively "providing instruction for Women Medical Practitioners preparing for examinations for the Diploma in Public Health and for the M.D. in State Medicine ... and of affording facilities to them and other women students desirous of carrying out research work in Public Health, Bacteriology or General Pathology."⁹⁴ Gentlemen wishing to undertake special research for the D.P.H. or M.D. in State Medicine arranged it with the Dean and the director of the bacteriological and clinical laboratories, Alex G. R. Fullerton, M.O.H. East Sussex County. Both men and women however followed the basic curriculum consisting of three courses: one in general hygiene studies, sanitary law and administration taught by Fullerton; a practical bacteriology course; and a "course of practical instruction in chemistry, physics and the use of meteorological instruments", taught by A. M. Kellas, the chemistry lecturer at the school. The bacteriologists who assisted Fullerton

were William Hillier and, in the special department for women, Hilda K. Whittingham.⁹⁵

The courses at the London medical schools in the early years of the twentieth century however were modelled on the first complete curriculum for the D.P.H. founded at Kings College during the 1890s. Kings was a pioneering institution in the development of the biomedical sciences during the 1890s. Recent investigations into the physiology department have shown that the work of its director from 1889, William D. Halliburton, constituted crucial research in the transition from chemical physiology to the emergent science of biochemistry.⁹⁶ Halliburton's "research school" produced a dynasty of later biochemists and bacteriologists.⁹⁷ King's was equally advanced in creating the first professorial appointment in Bacteriology in England when Edgar M. Crookshank took over the direction of the comparative pathology laboratory in 1887.⁹⁸ From 1892 the demonstrator assisting Crookshank was Richard T. Hewlett an associate of Halliburton and eventual successor to the chair in bacteriology.⁹⁹ Another first, was the creation of a professorial appointment in Neuropathology in 1889 which was filled by David Ferrier who had previously occupied the chair of forensic medicine.¹⁰⁰ William Robert Smith succeeded Ferrier as the professor of forensic medicine. At that time he was also the Medical Officer of Health for Woolwich and a practising barrister-at-law. As was noted earlier Smith founded the Public Health Medical Society

in 1884 using it as an effective pressure group to obtain reforms in the regulations of the D.P.H. In 1892 he had the opportunity of putting the new G.M.C. Rules into practice when King's College founded a Public Health department with Smith as its professor and director of a new Laboratory of State Medicine.¹⁰¹ F. J. Allan, the M.O.H. for the Strand, was appointed demonstrator from 1894. In 1893 the new department instituted a complete curriculum for the D.P.H., preparing candidates for the examinations of the English Conjoint Board and the University of Cambridge. The course was taught by both Smith and Crookshank and individual research was supervised by Hewlett. The course began with a general syllabus, taught during the summer session by Smith, covering the administrative, legal and preventive duties of a Medical Officer of Health.¹⁰² The General Course was followed by six months period of instruction in the state medicine laboratory consisting of five separate syllabuses: physics, chemistry, microscopy, parasitology, and bacteriology in relation to public health.¹⁰³ Additional laboratory practical work studying methods of air, water, food analysis and detection of poisons was available to candidates with Smith, lasting from one to three months. The period of laboratory study was organised in conjunction with a lecture course in comparative pathology and bacteriology given by Crookshank arranged specifically for D.P.H. candidates in his department.¹⁰⁴ By 1897

the structure of the Laboratory Course had been more clearly defined. The period of study was divided into four months in the state medicine lab and two months in the bacteriology department. The entire six months was co-ordinated with a new basic course in theoretical bacteriology given by Crookshank.. In addition the comparative pathology department gave special demonstrations in analytical methods and techniques for D.P.H. candidates and Hewlett supervised individual research.¹⁰⁵

From the outset, William Smith had arranged a six month compulsory period of tuition in out-door sanitary work at a district office under the supervision of a medical officer of health. Even before the revision of the G.M.C. regarding this aspect of the curriculum in 1899, the department had specified that supervision would only be undertaken by an M.O.H. from "a large urban district", i.e. a qualified and full-time officer. In addition to out-door supervision, the department arranged weekly visits to typical places of inspection for an M.O.H. at thirteen different venues throughout the year. Finally, the D.P.H. curriculum included a course of six lectures given by professor H. G. Seely from the Geology department on Physiography, covering the geological and meteorological determinants of disease dissemination.¹⁰⁶

The pioneering spirit of King's College during the 1890s was fully expressed in this comprehensive curriculum for post-graduate study in public health. Its inspiration came from William Robert Smith whose life's work was dedicated to

create (in effect) the national
statutory and official basis, facilities
and organisation for the system of public
health diplomas, training and appointments. 107

Much of the detail as well as the structure of the syllabus was reproduced by the London medical schools when they began providing systematic education for the D.P.H. The content of the curricula reflected the institutional determinants of the examination, however, and this was represented in the changing pattern of questions in the papers themselves.

The Examinations of the English Conjoint Board, 1884-1911

The examination for the D.P.H. not only varied between qualifying bodies but also changed over time. The content of the examination papers developed within the changing context of specialisation and regulation which has already been outlined. If this institutional context determined the nature of the examination then how was it reflected in the questions themselves? The changing pattern of questions in the examinations of one licensing body are investigated here with this question in mind.

In 1895, despite a conflict over the principle of state regulation, the English Conjoint Board of the Royal College of Physicians of London and Royal College

of Surgeons in England, was cited by the Inspector of the G.M.C. as maintaining the highest examination standards. The level of excellence required by the Board of its candidates was, in Duffy's opinion, a model on which all other licensing authorities should base their diplomas.¹⁰⁸

When the Board first established their D.P.H. in 1884 the curriculum was similar to that of Cambridge and the University of London. From the beginning, the examination was always held in two parts and after 1889 no candidate was allowed to enter the second until he had past the first part. Part I consisted of four examinations. The first two were written and the third and fourth were practicals in chemistry and microscopy. Part II was made up of three exams. Again the first two were written papers and the third was a test of practical knowledge of work in a sanitary district. All the papers were three hours long and took place either in the afternoons between 2-5.00 p.m. or in the evening between 7-10.00 p.m. The practical examinations however lasted all day. In addition there were viva voce exams. This structure did not alter until 1896 when the microscopy practical was replaced by one in bacteriology. All written papers contained six questions and practicals two or three questions. The candidate had no choice between questions but was required to answer all of them.¹⁰⁹

The original examination structure issued in 1884 by the Board remained unchanged until 1889. Papers

I and II contained empirical questions on physics and chemistry in relation to public health. Paper I dealt with topics such as the comparative merits of albuminoid ammonia and combustion processes for the determination of organic matter in water; the means of determining water vapour in the air; the ventilation of dwellings and house drains. Paper II dealt with a similar mix but also included geological, statistical and engineering topics; the humidity of various depths of soil, the merits of different types of building materials, the current death rates for urban and rural populations from small-pox, scarlatina, typhoid, measles and phthisis.¹¹⁰ Practical examinations on Part I generally involved the analysis of water, food, dust and air samples and concentrated on the demonstration of methods and techniques of analysis by the candidate.

The written papers in Part II were, according to the curriculum of 1884, intended to deal with preventive medicine and the sanitary acts as they affected the duties of a Health Officer. In the pre-1889 period "preventive" questions were primarily related to disease dissemination media, examining the candidate's knowledge of diseases spread through unwholesome milk, overcrowding or post-vaccinal morbidity such as erysipelas. Sanitary Law in paper 2 was covered formally. Candidates were asked to quote sections from the statutes themselves: "enumerate and explain the object of the principle regulations to which lodging houses may be made subject whether under statute or by means of by-laws"; "what are

the provisions of the 114th (or candle-house) section of the Public Health Act?"¹¹¹ For the third paper in Part II the candidate was required to visit a locality chosen by the examiners and to answer three written questions on inspection of it. The locality was always chosen for some specific set of sanitary problems which it presented and the candidates were asked to identify them and the methods used for resolving them.

After the issue of the G.M.C. Rules in 1889 the Conjoint Board restructured the second paper of the Part II examination substantially. The original interpretation of Rule I intended by the G.M.C. was that the licensing boards should require practical knowledge from their candidates of the work of an M.O.H. The Conjoint Board used paper two (Part II) therefore to test the application of candidates' theoretical knowledge to empirical problems of prevention. Chemical, geological, meteorological topics were still covered but tested by "situational questions", rather than presented in abstract propositions. Sanitary jurisprudence was no longer examined through knowledge of parliamentary acts but rather through knowledge of procedures enacted by a health officer through the course of his duties. For example, a question which would have previously asked candidates to enumerate clauses from the Acts covering common lodging now asked candidates:

An urban authority is about to make by-laws with respect to common-lodging houses. Specify the principle points on which you advise them in regard to the two following matters:- (a) for fixing the number of lodgers who may be received into a common lodging house, and (b) for promoting cleanliness and ventilation in such a house. 112

Geological and engineering issues were placed in the context of the administration of a rural district:

A village is situated on a deep clay soil bounded on one side, at a distance of two miles by range of chalk hills. Another village on a similar soil is situated in the middle of an extensive plain of similar geological character. The inhabitants of both villages resort to superficial wells and to ponds for their drinking-water. What objections would there be to such a water-supply? How would these objections be likely to manifest themselves and what is the nature of the advice you would give to (a) the sanitary authority, and (b) the heads of families with regard to these villages respectively. 113

The practical orientation of the re-structured paper 2 introduced questions which went beyond the original topics included in the curriculum. Occasionally preventive problematics were presented to the candidate which involved an economic analysis of population migration leading to epidemic disease:-

During a great depression in the building trade towards the end of the autumn quarter of a particular year, an epidemic malady of low fatality broke out and spread chiefly in the families of Irish Brick layers' labourers, but also amongst other destitute families residing in a group of close unwholesome courts in the north of London. The attacks commenced with rigours followed by sharp fever, vomiting and gastric tenderness these symptoms subsiding with copious sweating. What was the disease? What measures should have been adopted to arrest its spread? And in what order would you place those measures in point of urgency? 114

The next major change to the examination structure came after the 1895 G.M.C. report recommending the introduction of practical bacteriology. As was stated earlier, the fourth exam of Part I was changed to accommodate this but the Conjoint Board also began to introduce a test of theoretical knowledge in bacteriology also in the written examination of Part I. This trend eventually transformed the nature of the Conjoint Exam however which, by 1911, contained entirely bacteriological and biochemical questions in the written papers of Part I.¹¹⁵

The changing character of Part I of the Board's D.P.H. took place gradually between 1896-1911 but a complete revision of Part II was made after the issue of the new regulations by the G.M.C. in 1899. Both written papers of the Second exam were subsequently devoted to questions on the day to day duties of an M.O.H. After 1900 therefore, the Diploma of the Conjoint Board was an examination of bacteriological knowledge, and laboratory techniques and an understanding of the administrative procedures in a public health office.

Notes.

- 1: General Council for Medical Education and Registration, Minutes of the General Council, Vol. VI, 1868, June 27th.
- 2: Henry W.Acland, "Letter From the General Council of Medical Education." reprinted in Minutes, Vol. VII, 1869, July 9th and 12th, Appendix, pp. i-ii.
- 3: Henry Acland (1815-1900), see, J.B. Atlay, Sir Henry Acland, Regius Professor of Medicine in the University Oxford. A Memoir. (London, Smith and Elder, 1903)
- 4: Edmund Alexander Parkes (1819-1876), D.N.B. Vol. XV, pp. 294-296; Henry Rumsey (1809-1876), Lancet, 1876, Vol. II, pp. 841-842; for biographical reference of Sir George Edward Paget, (1809-1892), see, Stephen Paget (ed), Memoirs and Letters of Sir James Paget, (London, Longmans and Green, 1901), p.15, and pp.39ff.
- 5: G.C.M.E. , "Second Report of Committee on State Medicine", in Minutes Vol. VII, July 9th and 12th, 1869.
- 6: A relationship assumed also by French sanitarians and exemplified in the journal series, Annales d'Hygiène Publique et Médecine Légale; for discussion see, W. Coleman, Death is a Social Disease. Public Health and Political Economy in Early Industrial France, (Wisconsin, The University Press, 1982), pp. 14-24.
- 7: G.M.C.E., Minutes, (July, 1869); op. cit., Appendix, pp. xi-xv.
- 8: Ibid.
- 9: Ibid.
- 10: Ibid., pp.xv-xvii
- 11: Ibid., pp.xvii-xviii
- 12: Ibid., p.xviii.

- 13: Ibid. , pp.xix-xxi
- 14: G.C.M.E., Minutes, Vol. VII, 1869, p.134.
- 15: G.C.M.E., "Report of Committee on State Medicine.", in Minutes of Executive Committee, Vol. VIII, 1870, pp. 75-95.
- 16: Ibid., pp.77-78
- 17: Ibid., pp.79-81
- 18: Ibid., pp.81-83
- 19: Ibid., pp.84-85
- 20: Ibid..
- 21: A.M. Cooke, A History of the Royal College of Physicians of London. (Oxford, Clarendon Press, 1972), Vol. III, passim.
- 22: G.C.M.E., Minutes, Vol. X, 1873, April 7th, p.199.
- 23: Sir Humphry Davy Rolleston, The Cambridge Medical School. A Biographical History. (Cambridge, Cambridge University Press, 1932), p.43.
- 24: Medical Directory England and Wales, 1880, p.779.
- 25: Cooke, (1972), op.cit. , Vol. III, p.885.
- 26: G.C.M.E., Minutes of Executive Committee, Vol. XIV, 1887, Febuary 4th, p. 304.
- 27: Medical Directory England and Wales, 1877, p.227
- 28: G.C.M.E., Minutes of Executive Committee, Vol. XXV, February 27th 1888, paragraph, 13

- 29: Ibid.
- 30: Medical Directory op. cit. 1876, p. 712
- 31: Medical Directory, 1877, p. 227
- 32: Ibid.
- 33: John Simon, English Sanitary Institutions, (London, Cassell, 1890), pp. 353-391
- 34: The Medical Act 1886 (49 and 50) CH. 48, pp. 12-13
- 35: A. M. Cooke, op. cit., Vol. III, p.886
- 36: G.M.C. Minutes, Vol. XXVI, 1889, pp. 70-71
- 37: Ibid, "Remarks of the Education Committee", p. 72
- 38: C. E. Saunders and William Robert Smith, "Letter to the President of the Council, November 19th, 1887." G.M.C. Minutes of Executive Committee, Vol. XXIV, 1887, November, 21st. pp. 304-306
- 39: Ibid.
- 40: Ibid.
- 41: G.M.C. Minutes of Executive Committee, Vol. XXV, 1888 February 27th.
- 42: G.M.C. Minutes, Vol. XXVI, 1889, June 1st.
- 43: Ibid. Appendix.
- 44: G.M.C. Minutes of Executive Committee, Vol. XXVI, 1889, May 30th. pp. 66-68.

- 45: Minutes, (1889, June 1st) op. cit. Appendix.
- 46: Ibid.
- 47: Samuel Haughton moved that the Council should opt for Inspection of examinations rather than the institution of regulations. G.M.C. Minutes, Vol. XXV, 1888, November 27th, paragraph 16.
- 48: G.M.C. Minutes, Vol. XXVII, 1890, June 4th, paragraph 15, "Memorial From Irish Unqualified Assistants."
- 49: Ibid. "Letter From the Royal University of Ireland."
- 50: G.M.C. Minutes of Exectuive Committee, Vol. XXVI, 1889, May 31st, "Letter From Charles Cameron and Francis Allan, secretaries of The Public Health Medical Society."
- 51: G.M.C. Minutes of Executive Committee, Vol. XXVI, 1889, May 31st, Appendix.
- 52: Cooke, op. cit., Vol. III, p.886
- 53: Ibid.
- 54: J. C. McVail (1849-1926), Lancet, 1926, Vol. II, pp.306-307; John Glaister (1856-1932), B.M.J., 1932, Vol. II, pp.1215-1216.
- 55: G.M.C. Minutes, Vol. XXVII, 1890, May 27th, pp.55-60
- 56: Ibid.
- 57: G.M.C. Minutes, Vol. XXVII, 1890, November 27th, paragraph 18.
- 58: G.M.C. Minutes, Vol. XXVI, 1889, November 26th, p. 135
- 59: C. F. Duffy, "First Report of the Public Health Committee on the Inspection of the Examinations in Sanitary Science

of the Universities and Licensing Bodies of the United Kingdom", G.M.C. Minutes, Vol. XXXII, 1895, Appendix XI, pp. 455-743.

60: Ibid., p. 464

61: Ibid., pp. 465-466

62: Ibid., p. 721

63: Ibid., pp. 490-501

64: Ibid., p. 683

65: G.M.C. Minutes, Vol. XXXV, 1898, Appendix VIII, "Interim Report by the Public Health Committee on the Interpretation Given at Different Places to the Regulations of the General Medical Council as Regards the Course of Study for the Diploma in Public Health." pp. 465-473.

66: G.M.C., Minutes, Vol. XXXIII, June 9th, 1896; "Every candidate shall have produced evidence that, during a period of six months after obtaining a registrable qualification, he has practically studied the duties of outdoor work under a Medical Officer of Health."

67: "Interim Report" op. cit., p. 467.

68: G.M.C. Minutes, Vol. XXXVI, 1899, Appendix XXI, pp. 759-773

69: Ibid., p. 765

70: Ibid., p. 766.

71: Ibid., p. 767.

72: G.M.C. Minutes, Vol. XXVIII, 1891, pp. 28, "Table Showing Results of Professional Examinations Held in 1890 for Qualifications in Sanitary Science."

- 73: Combination of districts was first encouraged by the 1875 Public Health Act, then later reinforced by the 1888 Local Government Act. See, Local Government (England and Wales) Bill, [51 & 52 Vict.] [Bill 138], P.P. 1888, Vol. IV, First Schedule; "Powers, Duties and Liabilities of Secretary of State, Board of Trade and Local Government Board Transferred to County Councils ; section 286, Public Health Act 1875: Power to unite districts for purposes of appointing Medical Officers of Health." p.148
- 74: Minutes (1899, Appendix XXI) op.cit., pp.768-772
- 75: G.M.C. Minutes, Vol. XXXVII, 1900 November 29th, pp.147-149
- 76: Ibid.
- 77: Ibid.
- 78: G.M.C. Minutes, Vol. XXXVIII, 1901, June 4th, pp. 13-21, "Tables Showing Results of Professional Examinations Held in 1900."
- 79: See, T.F.G. Parsons, The History of St. Thomas's Hospital, Vol. III, From 1800-1900 (London, Methuen, 1936), p.183 and p.200: Alfred Carpenter was appointed to give a series of lectures in state medicine at St. Thomas's in 1876 and subsequently held a post as lecturer on public health until he resigned in 1886.
- 80: E. Headlam Greenhow, (1814-1888). Lancet, Vol. II, pp. 1104-1106.
- 81: H. Campell Thompson, The Story of Middlesex Hospital Medical School, (London, Murray, 1935), pp. 57-64.
- 82: Edward Seaton for example taught a course in Public Health at St. Thomas's in addition to J.S.Bristowe,

- 82: A.Monkton-Copeman and Francis Bond by 1894, see,
Medical Directory for England and Wales, 1894,
pp.1838.
- 83: Ibid.,pp.1831
- 84: Ibid.,pp.1838
- 85: Ibid.,pp. 1832.
- 86: W.R. Merrington, University College Hospital and
Its Medical School (London, Heinemann, 1976),
pp. 217-225; William Henry Corfield,(1843-1903),
Transactions of the Epidemiology Society, Vol.XXII,
1902-1903, pp.161-163 and Lancet, 1903, Vol. II,
pp.778-781.
- 87: Merrington,op.cit., pp.217-225
- 88: See, Victor Horsley and Vaughn Harley, (eds),
The Report of the Department of Pathology of
University College London, Vols. 1-5, 1892- 1895;
for change of style instituted by Harley, see,
Vaughn Harley , and Francis Goodbody (eds),
Report of the Department of Pathological Chemistry
of University College London, (New Series),
1896-1902
- 89: Rupert Boyce,(1863-1911), D.N.B., 1901-1911,pp.203-204.
- 90: For D.P.H. course set up under Kenwood, see,
University College Hospital Medical School,
Calendar, 1907-1908,p.5, p.20, and pp.44-53.
- 91: See, The University of London, Historical Record
1836-1912, (London, The University Press, Hodder
and Staughton, 1912) pp.7-25 and pp.84-86.
- 92: University of London, Westminster Hospital Medical
School, Calender, 1907-1908, pp. 31, and pp.54-57.

- 93: University of London, Middlesex Hospital Medical School, Calendar, 1907-1908, p.9
- 94: Ibid., p.23
- 95: Ibid.,pp.31-34
- 96: N. Morgan, "William Dobinson Halliburton, F.R.S. (1830-1931)." in Notes of the Royal Society of London, Vol. 38, 1983, pp.129-144.
- 97: Ibid., p.137.
- 98: H.W. Lyle, Kings and Some King's Men (London, Oxford University Press, 1935), pp.179-181
- 99: Richard Tanner Hewlett, (1865-1940), Lancet, 1940, Vol. II, p.407; B.M.J. 1940, Vol.II, p.400, and J.C.G. Ledingham in Nature 1940, Vol. 146, p.552
- 100: Lyle, op.cit., p.407; William Robert Smith, (1850-1932), Lancet, 1932, Vol. I, p.697.
- 101: Kings College, Calendar 1892-1893, p.250
- 102: Ibid., p.350
- 103: Ibid., p.351
- 104: Ibid., p.354
- 105: Ibid., pp.353-358
- 106: George Newman also assisted with teaching after 1897, when he became demonstrator in Crookshank's department of Comparative Pathology and Bacteriology. See, King' College, Calendar, 1897-1898, "Faculty of Medicine."
- 107: Lancet, 1932, Vol, I, p.697
- 108: Duffy, in Minutes 1895, op.cit., p.463
- 109: The Royal College of Physicians of London and The Royal College of Surgeons England, The Papers Set For The Examination For The Diploma in Public Health 1887-1911, (London, Taylor and Taylor, 1887-1911).

- 110: Conjoint Board Papers, op. cit. March 1887,
Part I, paper 1 (2.00-5.00p.m.) and paper 2
(7.00-10.00 p.m.)
- 111: Ibid., March 14th 1887, Part II, paper 1 (7.00-10.00 p.m.)
question 2.
- 112: Conjoint Board Papers, op. cit. June 1889, Part II,
paper 2, question 5.
- 113: Ibid. question 1.
- 114: Conjoint Board Papers, op. cit. July 14th, 1890,
Part II, paper 2, question 3.
- 115: For example, see, Conjoint Board Papers, op. cit.
1911, Part I, paper 1, questions 1-6.

THE SOCIETY OF MEDICAL OFFICERS OF HEALTH AND THE
PROFESSIONALISATION OF PREVENTIVE PRACTICE.

The history of scientific and medical societies has provided empirical evidence of theoretical ideas and material practice in science and medicine. The development of such institutions illuminated the specific ideals, techniques and instruments of science and medicine at different periods.¹ Berman, for example, examined the origin and development of the Royal Institution in order to understand the historical determinants and consequences of chemical research based in a public laboratory, i.e. to place the organisation of scientific ideas and practice in the context of social change.² If it is possible to place science in the context of historical change through the study of its most learned institutions, then equally the same project may also be completed for an examination of scientific and medical expertise through the professional organisation of experts.³

During the 1880s preventive medicine achieved a new legitimate status. By 1889 successful candidates for a diploma in public health possessed an exclusive licence to practise prevention. Recruitment to the Metropolitan sanitary districts during the 1890s illustrated that such men, trained specifically for office, were increasingly appointed to the public health service. The task undertaken here is to examine the professional association of M.O.H.s during these initial years following the establishment of their statutory qual-

ification. The question posed, asks whether this period within the society realised a consolidation of professional status in prevention as a separate medical practice from cure?

History of the Constitution of the S.M.O.H.

The association of M.O.H.s began on the 23rd April 1856. A small selection of Metropolitan officers met at the home of William Pavy, at Finsbury Square.⁴ He invited Drs. Ballard (Islington) Barnes (Shoreditch), Illif (Newington), Hillier (St. Pancras), Letherby (City of London) Odling (Lambeth) and Godrich (Kensington). At that meeting the group arranged to call a larger meeting of all Metropolitan M.O.H.s on Tuesday May 13th at 8 O'clock at the rooms of the Medical Society of London, St. Georges street, Hanover Square.⁵ In the meantime Robert Hillier was asked to act as secretary. Thirty officers attended on the 13th, Dundas-Thompson was asked to take the chair. Formation of an Association was proposed by Edwin Lankester in a resolution which originally was worded,

That the Medical Officers of Health present combine themselves into an association for the purposes of mutual assistance and the establishment of such a plan of action in their several districts as may....conduce to the efficiency of sanitary administration and the advancement of sanitary science.⁶

An objection was raised to the resolution which reflected something of the character of the association from its inception. John Liddle suggested that the words "combine themselves" might be liable to "misinterpretation".⁷ The records of the meeting on the 13th May in fact

contain a short note on the subject. The minutes were recorded in the handwriting of Robert Hillier and he added an elaboration of Liddle's argument, saying that,

and a fear was expressed lest any of the vestries should suspect anything like a political combination on the part of their medical officers.⁸

The objection was acknowledged by the meeting and the words "combine into" were replaced by "form themselves into".⁹ Clearly there was an intention from the beginning that the officers resist being in any way associated with a kind of combination which could appear to be a Trade Union. Just as clearly however they were reticent to be associated with the polity of Whitehall. When John Simon was proposed as the first president, a short discussion ensued as to the wisdom of having any "officer of the government" as a member of the Association. In the case of Simon the objection was dismissed because of the significant role he had played in the development of sanitary science:

but it was ultimately agreed that they had nothing to do with Mr. Simon politically but as a man of Sanitary Science and there was no difference of opinion as to the great advantages that would be gained in having him as president.¹⁰

The objects of the Association were eventually settled as that of "mutual assistance and the advancement of sanitary science", the word "combination" having been omitted.¹¹

In 1869 the Metropolitan Association changed its name to simply the Association of Medical Officers of Health and began to add extra-metropolitan officers to their membership. After the passing of the 1872 Public

Health Act, making the appointment of provincial officers compulsory, the organisation of extra-metropolitan associations grew systematically. Societies were formed by medical officers of health in the North West, Birmingham and Midlands area, Yorkshire, and in the Northumberland area, and for the Northern Counties. These groups often held joint meetings and resolutions agreed upon during them were represented to the Metropolitan Association and publicised to other audiences also.¹² In 1888 the London group amalgamated with the Birmingham and Midland, Northwestern and Yorkshire Associations, the only surviving provincial groups by that time. It was believed that the combination would give the Society,

additional strength and authority in influencing the direction of health legislation.¹³

At the first annual meeting after the amalgamation the membership was announced as numbering three-hundred and-five members and sixty-four associates.¹⁴ In 1891 Thomas Orme Dudfield proposed that the Society be incorporated under the Companies Acts 1862-1890.¹⁵ By 1892 this procedure was completed and it became a limited company. The membership had then increased to five-hundred and by 1900 it stood at seven-hundred-and-sixty-two.¹⁶ In 1908 the Society again changed its name by dropping the title of "Incorporated" to become simply the Society of Medical Officers of Health and remained as such until 1974 when the re-organisation of the Health Service replaced the M.O.H. with Community

Physicians in the new Area Health Authorities.¹⁷

Additional branches were formed within the Society after 1891 and during the 1920s splinter groups began to break with the parent organisation to operate with some autonomy from it.¹⁸ The largest and oldest of these was the County Boroughs Group which had its origins in the Conference of County Officers held in 1902.¹⁹ By the end of the century there were four new branches in the West of England and South Wales, the Home Counties and the Scottish Branch absorbed members of the Scottish Society in 1891.²⁰ In 1900 a branch of the Society was formed in Southern Australia but the life of this foreign corresponding association was short lived and was dissolved during 1903.²¹ A New South Wales branch was re-created in 1948 at the same time that the first Northern Ireland branch was formed. The East Anglian branch started in 1904 and the Welsh branch in 1919. The Metropolitan and Home Counties groups amalgamated into the London branch in 1966.²²

The constitution of the Society as set out in 1856 provided for honorary and ordinary members. All past Metropolitan officers qualified automatically as an ordinary member on receipt of a subscription fee but honorary members were nominated, by not less than six members, and elected by at least four-fifths of those present at the meeting wherein the candidature was considered.²³ In 1864 the by-laws were altered to allow

extra-metropolitan officers to be elected as ordinary members.²⁴ Categories of membership were adjusted in 1873 and in 1880. After the Incorporation in 1892 the new Articles of Association provided for:

(a) Fellows, i.e. M.O.H.s both metropolitan and provincial; and (b) Ordinary members, i.e. medical men qualified for appointment as M.O.H.s even if they did not hold a current appointment; (c) Honorary Associates, i.e. persons distinguished in matters related to public health; (d) Associates, i.e. persons interested in the advancement of public health. In 1895 this structure was again altered slightly with the re-naming of the category of Honorary Associates as Honorary Fellows.²⁵

The articles of association underwent a number of revisions, allowing specialist groups to be formed within the Society in 1919 for example. In 1958 it was proposed that the Society become a college of preventive medicine but this proved unacceptable to the Board of Trade. The decision of the Board at that time was that the circumstances and activities of the Society did not justify status as a college. When in 1969 the Society applied for yet a further modification of its title to that of the Society of Community Medicine it was again deferred due to the possible emergence of the Faculty of Community Medicine. Change in title during the 1950s and '60s however was largely an issue of exemption from local taxes, i.e. the rates. In 1959 the Society had appealed to the House of Lords against a majority ruling in the Court of Appeal which had confirmed the Lands Tribunal decision not to recognise the status of the

Society as a scientific body. Within the meaning of the Scientific Societies Act of 1943, a scientific body is exempt from paying local rates. The Lords' appeal however was lost and thus the Society was forced to pursue other avenues in its endeavour to reduce its overheads. In 1969, having failed to gain status as a college or faculty, it applied to the Charities Commission for registration as a charity. With some modifications to the Articles of Association charity status was granted which succeeded in exempting the Society from the greater part of local taxation, the entire rate of Corporation Tax and Selective Employment Tax enabled the Society to recover tax on donations.²⁶

At the formation of the Metropolitan Association in 1856 the management structure consisted of a president, elected annually; a varying number of vice-presidents elected sporadically; an honorary treasurer, elected annually but eligible for re-election; an honorary secretary elected in the same way as the treasurer. In 1863 the number of vice-presidents was fixed at three, the senior one retiring each year. In 1877 the practice of making past presidents, vice-president was introduced and after the Incorporation in 1892 presidents of provincial branches were also included. After 1862 the number of secretaries of the Society was increased to two and by the Articles of Association in 1892 one of them had to be a metropolitan member. After 1889 the

creation of the Society's journal, Public Health, necessitated an honorary editor being added to the list of officers. From 1891 the Society appointed a solicitor and from 1892 two auditors and two trustees of the Berridge Bequest all of whom were re-selected annually.²⁷ Before leaving 9 Adelphi Terrace, the location of the Society between 1901-1905, a library was started and eventually installed in 1, Montague street, Russell Square. A librarian was appointed from 1905 to catalogue and maintain the collection.²⁸ Apart from the officials of the Society the management structure has included a variety of different decision making bodies. Between 1856 and 1859 the Metropolitan Association was run by four Standing Committees together with a General Purposes Committee consisting of the chairmen and the secretaries of the standing committees. The four standing committees were originally set up to deal with "certain departments of Sanitary Science".²⁹ These areas of special concern gave their names as titles of the committees: trades, nuisances, food adulteration, aetiology, meteorology. The Standing Committees were not elected after 1859 and the General Purposes Committee was to consist of the officers and eight members to be elected from the entire membership of the Association.³⁰

The General Purposes Committee was replaced as the governing body of the Association in 1873 by a Council consisting of six metropolitan and six provincial officers. After the amalgamation in 1889 the structure of the Council was revised. The number was increased to twenty-

four and the method of election changed. Each branch had the right to elect one Council member to represent them and the remainder were to be elected by the retiring Council. The new Articles, created in 1895, again changed the management of the Society allowing the Metropolitan branch eight Council representatives and each provincial branch two members. Each new branch could elect two Council members whereupon the Metropolitan branch was allowed to add one more representative to its number.³¹

Patterns of Management, 1856 - 1906.

A total of 196 individual members of the Society were involved in its management during the first fifty years; i.e. either as an office holder, president, secretary, treasurer etc, or as a member of one of a succession of central decision-making bodies; from 1859-1873. The General Purposes Committee; 1873-1888 the Council of twelve members as it was first constituted; and afterwards the Council of the Amalgamated Society including its amended form after 1895.³²

The question of who governed the Society is two-fold. Who were the individuals involved and what status and honour did they command within the strata of profession as a whole? In chapter one recruits to the metropolitan public health service were classified into a tripartite hierarchy of 'elite physicians', 'university qualified' and 'medical licence holder', officers. The educational history and occupational diversity of recruits were analysed to produce three categories of social/professional

status. This classification of professional status can now be used to investigate what role the various strata played in the management of the Society. In addition to the professional status of officers an important feature of the power structure was the relative influence of metropolitan and provincial representatives.

From 1856 - 1873 the governing body consisted, of course, entirely of metropolitan officers. After the formation of the Council in 1873, provincial officers began to be represented in central decision making but did not gain full recognition in management, in correct proportion to their greater membership in the Society, until after the Incorporation in 1892. Between 1856-1906 sixty-four metropolitan and 132 provincial officers served in the management of the Society but this does not indicate the relative influence of both groups accurately.³³ Crude totals can be misleading and the real balance of power between metropolitan/provincial, elite/non-elite, early/late members elected to govern the Society requires more detailed analysis.

Table I demonstrates that a wide variation existed amongst the managerial structure of the Society during the period between 1856-1906. Officers from all levels of the hierarchy became involved and remained amongst the central decision makers for an unpredictable amount of time.³⁴

TABLE I

Class of Physician		Elite	MD	MRCS LSA	Tot.
Number	1- 10	10	90	40	140
of years	11-20	9	21	7	37
in mana-	21-30	4	6	1	11
gement.	Over 30	5	3	0	8
	Total	28	120	48	196

By far the greatest majority of office holders were members of the middle strata of the professional hierarchy. However it is equally clear that in terms of the long-serving officers there was a more even distribution. Members serving for more than ten years were divided between eighteen elite and thirty university trained officers. An even sharper dichotomy emerged when an examination was made of how many members served for over twenty years: nine from the elite and nine officers from the M.D. strata constituted the longest serving managers of the Society during the period.

Where did the longest serving managers of the Society come from however? Obviously since the metropolitan association was in existence for longer than the provincia

societies, members of the former were likely to hold office longer. Indeed thirteen metropolitan, as opposed to only six provincial, members served for over twenty years. Provincial members had more opportunity however to remain in office for more than ten years at least and twenty-two of them did so together with thirty-four metropolitan men.³⁵

TABLE II

METROPOLITAN
MEMBERS:

Class of Physician	Elite	M.D.	M.R.C.S./ L.S.A.	Total
Number 1-10	3	17	10	30
of 11-20	6	10	5	21
years 21-30	2	4	0	6
in Over mana- 30.	5	2	0	7
gement Total	16	33	15	64
Class of Physician	Elite	M.D.	M.R.C.S./ L.S.A.	Total
Number 1- 10	7	73	30	110
of 11-20	3	11	2	16
years 21-30	2	2	1	5
in Over mana- 30	0	1	0	1
gement Total	12	87	33	132

PROVINCIAL
MEMBERS:

Early Years: 1856-1888.

It is also clear from Table II that there was a small group of metropolitan members who managed the Society for a very long period indeed, over thirty years. Some of this group had been elected to the first standing committees in 1856. They remained involved in the governance of the Society however throughout the changes in its structure including its amalgamation and incorporation with the Provincial Associations. J.S. Bristowe, George Buchanan, James Vinen, Septimus Gibbon and John Tripe were amongst the original officers who founded the Metropolitan Association and were on the Council of the Society during the 1890s. Buchanan was a vice-president until 1904. A second generation of long-serving metropolitan council members were elected in the 1870s, William Corfield, Shirley Foster Murphey, Thomas Orme Dudfield and George Paddock Bate, who all served as presidents of the Society also.³⁶ Bristowe, Buchanan, Corfield, Murphey and Bate were all Fellows of one of the Royal Colleges but none of them was typical of the elite physicians recruited to the metropolitan sanitary districts during the 1850s. The professional careers of these and other long serving officers were, with the exception of Bristowe, entirely devoted to the development of preventive medicine.³⁷

In the original management structure of the Association however these entirely preventive practitioners were in the minority. The composition of the medical skills upon the standing committees between 1856-1859 was unique. Never before or since had the aptitudes of

such individuals as the chemists William Pavy and Odling, physiologist J.B. Sanderson, gynaecologist Robert Barnes, meteorologist Edwin Lankester and consulting physicians Andrew Barclay, Robert Druit, Hillier and Stevenson for example conspired to create the means to control unwholesome food, trades, the removal of nuisances, etc.

Unlike the majority of the new metropolitan members elected to the Council after 1873, the provincial officers predominantly served for short terms only. The first extra-metropolitan officers elected were John Adams (M.O.H. Richmond rural district) David Moxley (M.O.H. Chiswick) Philip Jones (M.O.H. Enfield Middx) and John Cakeshott (M.O. H. Hornsey). All of them remained on the Council for less than five years. Francis Bond (M.O.H. Gloucester urban district) was elected in 1874 and was the only provincial officer to serve for longer than thirty years subsequently.³⁸ Although he was a member of the Council until 1906 he never held any of the offices, i.e. president, secretary etc. William Thomas Woodforde was also re-elected to the Council in 1873, after being a member of the General Purposes Committee of the Metropolitan Association since 1870. In 1873 however he was elected as an extra-metropolitan representative since he had now moved from the London district of Bow to take up his appointment for the combined district (later the county borough) of Berkshire.³⁹

The new provincial officers replaced the elite physicians who had run the Metropolitan Association, such as Barclay and Stevenson. The new metropolitan sanitarians

elected during the 1870s, such as Corfield, Bate and Dudfield however, retained their domination of the Council. The metropolitan Council members also continued to dominate the offices of the Society. During the 1880s this pattern remained unchanged with new London members joining the controlling caucus. William Collingridge, Samual Lovett, William Kempster, Edmund Gwynn and Alexander Winter-Blythe were council members for the following twenty years and all held one or more offices on it.

The representation of the provincial officers did develop slowly during the 1880s with Francis Bond and W.T.G. Woodforde being joined by more long-term members. Henry Armstrong (M.O.H. Newcastle urban district) was elected in 1883, William Thursfield (M.O.H. Shropshire combined district) in 1884 and Alfred Ashby (M.O.H. Grantham combined rural district) in 1886. They remained for over twenty years on the Council. Armstrong became president from 1889-1891 and was a strong voice articulating the interests of the provincial M.O.H.s in the Society until his death in 1923. He trained and qualified at the University of Durham College of Medicine in 1867 and subsequently became the resident medical officers to the Newcastle dispensary and Fever Hospital. By the time he achieved his appointment as M.O.H. for the Newcastle Urban and Tyne Port authority in 1873 he had become the lecturer on botany at his old college and was later to lecture there on public health also from 1877. He and his brother, Luke Armstrong the registrar

at Durham, were instrumental in setting up the curriculum and examinations for the D.P.H. there from 1881. Within his sanitary district itself he convinced his authority to become the first to establish local by-laws governing the distribution of milk in 1892, and to build a City Hospital for infectious diseases which opened in 1888. The strength of his commitment, was tested in 1912 however when his refusal to withdraw his denunciation of the insanitary conditions of the shipping trade at the port, led to his resignation as M.O.H. . He remained president of the Northern Branch of the Society, however, and its spokesman on the Council. ⁴⁰

Henry Armstrong was the second provincial member to be elected as president of the Society. The most symbolic event marking the emergence of real influence of provincial members on the Council was the election of Alfred Hill as president in 1888, during the year of amalgamation. Alfred Hill (1826-1922) was the M.O.H. for Birmingham (1872-1903) and professor of chemistry and toxicology at Queens College from 1851. He had two sons who followed closely in the footsteps of their father's career. Alfred Bostock Hill (1854-1932), succeeded his father to the chair of chemistry at Queen's in 1879 and later took the chair of hygiene at Manson's College, Birmingham. He was the M.O.H. for Warwickshire and also became president of the S.M.O.H. , always being a highly active and vocal member of the Society. Thomas Eustace Hill, (1866-1932), was, like his brother, a M.O.H., for the County of Durham. ⁴¹ In his presidential address to the Society, in 1888 Alfred Hill emphasised that strength lay in unity:

benevolent socialism or rational communism, which is the root of most, if not all great and beneficent movements and such union constitutes an indispensable feature of all civilization and human progress.⁴²

Progress in this context meant the development of compulsory legislation in all major areas of public health reform, according to Hill. Amalgamation of the Society was, he believed, the opportunity for M.O.H.s to act collectively to effect this end. Discretionary adoption of health legislation was its downfall in Hill's view:

Sanitary legislation as a rule fails primarily because it is permissive and the first impulse is to decide that to be effectual it should be compulsory... unfortunately there is so much ignorance and prejudice and "pure cussedness" of opposition in the world that compulsion in many instances is impossible. Society is not ready for it.⁴³

It was his view therefore that M.O.H.s should bring pressure upon the legislature to "lead" public opinion against the ignorance which objected to compulsion by making it "complete instead of partial".

New Trends: 1888-1906.

Although the Society was amalgamated in 1888 the provincial branches did not get full representation on the Council until 1892. The new structure of the Council resulted in a flood of provincial members participating in the management of the Society. The extent of their influence however was limited severely by the fact that the great majority of them served on the Council for one year only.⁴⁴

TABLE III

OFFICERS SERVING FOR ONE YEAR	Class of Physician		Elite	M.D.	M.R.C.S /L.S.A.	Total
	Period of election to office	1856- 1870	1	2	1	4
		1871- 1888	2	9	4	15
		1888- 1906	0	27	13	40
		Total	3	38	18	59
METROPOLITAN OFFICERS SERVING FOR ONE YEAR ONLY		1856- 1870	1	2	1	4
		1871- 1888	0	3	1	4
		1889- 1906	0	0	0	0
		Total	1	5	2	8
PROVINCIAL OFFICERS SERVING FOR ONE YEAR ONLY		1856 - 1870	0	0	0	0
		1871- 1888	2	6	3	11
		1889- 1906	0	27	13	40
		Total	2	33	16	51

Table III illustrates that the earlier periods were characterised by very few officers, either metropolitan or provincial, from any stratum of the professional hierarchy serving for one year only. The new pattern which developed after 1888 meant that the

management structures of the earlier and later periods contrasted sharply.⁴⁵

TABLE IV

Earliest period of management: The structure of the Standing Committees and the General Purpose Committee, 1856-1873. *

Class of Physician		Elite	M.D.	M.R.C.S. L.S.A.	Total
	1-10 years	2	6	5	13
Length of	11-20 "	6	3	1	10
time served in	21-30 "	1	0	1	2
office	Over 30 years	3	4	0	7
	Total	12	13	7	32

*Table IV includes men who were elected to the management of the Society during this period but who often served in it beyond 1873.

This reflects the old pattern of the Metropolitan Association, a small group running it for the entire period of its existence. After 1888 a huge number of officers gained some experience of being involved in decisions which affected the whole profession, but for a short period only.⁴⁶

Officers elected to manage the Society after 1888:

Class of physician		Elite	M.D.	M.R.C.S. L.S.A.	Total	
OFFICERS ELECTED -1906		1-10years	5	63	27	95
		11-20 "	1	10	5	16
	Length of	21-30 "	1	3	0	4
	time served	Over 30 years	0	0	0	0
	in office.	Total	7	76	32	115
COUNCIL MEMBERS ELECTED -1906		1-10years	1	6	2	9
		11-20 "	0	2	3	5
		21-20 "	0	3	0	3
		Over 30 years	0	0	0	0
		Total	1	11	5	17
ASSOCIATE MEMBERS ELECTED -1906		1-10 years	4	57	25	86
		11-20 "	1	8	2	11
		21-30 "	1	0	0	1
		Over 30 years	0	0	0	0
		Total	6	65	27	98

Very few of these officers managed the Society for longer than ten years. A new trend began during the 1890s which meant that in future there would be far broader participation in running the Society by

its membership. This changing trend however did not have any immediate effect on the location of power within the existing management structure before 1906. The Council members elected during the 1870s and 1880s still figured prominently during the 1890s.

The continuity of metropolitan control was extended with further recruitment to the offices of the Council of William Smith's assistant at Kings College, Francis J. Allan (M.O.H. The Strand) first elected in 1894 and secretary to the Society 1897-1901. John Fredrick Sykes, who succeeded Shirley Foster Murphey as the M.O.H. for St. Pancras in 1888, became the secretary in 1889 and president by 1904. Thomas Dudfield's son, Reginald, took over the Paddington district in 1896, after being M.O.H. for Eastbourne, and succeeded his father as secretary in 1894. Louis Coultman Parkes was elected to the Council in 1892.⁴⁷

The metropolitan council members elected after 1888 all possessed a D.P.H.⁴⁸ There were a group of provincial officers elected as either secretary or president of the Council during this period who were similarly qualified. John Thresh (M.O.H. Essex county)

and James Mitchell Wilson (M.O.H. Doncaster) were secretaries of the Society between 1891-1900 and both received their D.P.H. from Cambridge. They were probably fellow students of John C. McVail (M.O.H. Stirling) who was the first Scottish president of the Incorporated Society in 1900 and who also studied for his diploma at

Cambridge in 1885.⁴⁹ John Herbert Manley, (M.O.H. West-Bromwich . County) secretary 1896-99 obtained the Conjoint Board's diploma in 1889 and Arthur Newsholme who joined the Council in 1889 had taken a London certificate in public health in 1885.⁵⁰

The increased influence of the provincial representation in the management of the Society was reflected in the number of offices held by them during the 1890s. Altogether there were six who became president and four who took office as secretary. The route of provincial members to the central offices of the Society varied. The career histories of some of the less well known figures were typified by Herbert Manley, Francis Vacher or Mitchell-Wilson. Manley left Winchester public school to study at Cambridge during the early 1880s where he obtained his natural sciences tripos honours, his M.A, M.B. and M.D. He moved to London in 1885 and qualified for practice at Guy's where he later studied for his English Conjoint Board diploma. He returned to West-Bromwich where he was born, to join his father's practice there. He succeeded his father as the part-time M.O.H. for the Borough but he battled with his authority for twelve years to institute a full-time appointment. At one point he considered leaving altogether to take up a legal career but the borough conceded to his demands in order to prevent him from doing so. He was active as the secretary and later president of the Midland branch of the Society whereupon he joined the central Council.

He became a controversial secretary of the Council⁵¹
in 1896.

James Mitchell Wilson also achieved initial recognition from his colleagues through his activities in his local branch. Qualifying in 1867 at Glasgow and obtaining his D.P.H. from Cambridge in 1877, Wilson took up his first appointment as the M.O.H. for Rochdale in 1878. Later he moved to Doncaster Borough and in 1901 became the first school medical officer to the East-Riding County. He first became active in the Yorkshire branch of the S.M.O.H. when his name appeared in the minutes of their joint meeting on 25th July 1878 with the North-Western and Northern Counties branches. In 1888 he was elected president of his branch and subsequently joined the Council. He became secretary of the parent Society in 1899 and was frequently pressurised by his branch to stand for the presidency which he continued to resist.⁵²

Mitchell-Wilson had a different approach to holding office in the Society from Francis Vacher, one of the founders of the North-Western branch. Vacher had begun his career as a student of fine art, in fact, at Kensington and later in Germany. Eventually he turned his attentions toward medicine, qualifying in Edinburgh and becoming a fellow of the Royal College of Surgeons of Edinburgh in 1878. In 1873 however he had already become, at the age of thirty, the M.O.H. for Birkenhead which office he held until in 1893, when he was made County M.O.H. for Cheshire. Being a founding member and president of the North-Western branch, the expansion of

of the Council in 1888 enabled him to represent his regional officers in the management of the Society for the first time. By 1895 his value as a council member, and branch president was acknowledged when he was elected to serve as president of the Society.⁵³

Similar accounts of their rise through the Society and the profession could be written of a number of the long term, and office holding, provincial members elected to the council in these first years of the expansion of the central governing body of the Society. A pattern of extensive activity in the work of the branches, often accompanied by promotion through the public health service itself to the post of a county officer, was common amongst the influential provincial council members of this period. The concerns and values of the provincial branches of the profession were being built into the development of the policy making structure of the Society through the representation of these officers. The importance of their work to the branches, ensured them re-election to the central Council, providing them with a continuity in the management of the Society through which they were able to affect the direction of its policies.

There were also a number of provincial officers who joined the Council during this period who became Whitehall civil servants: Arthur Newsholme, M.O. to the Local Government Board, George Newman, first M.O. to the Ministry of Health, Arthur Whitlegge and Edward Seaton, medical inspectors for the L.G.B, and Henry Kenwood, the professor

of hygiene at University College London, who also became an inspector for the Board.⁵⁴

In writing the obituary of George Reid in 1925, Alfred Bos-tock Hill recalled the days when they had both served in the Midland branch and later on the Council of the Society, "in the days, long since past, when the rights and privileges of Metropolitan and Provincial members were much debated." ⁵⁵

Even after their numbers were vastly reduced, in 1895, the metropolitan members of the Council retained a strong and continuous influence throughout the first fifty years of the Society. The new trends in provincial representation in decision making however meant that their rights and privileges were beginning to be debated, even "hotly debated", rather than ignored.⁵⁶

The Work of the Society 1889- 1911.

After 1888 the Society represented the national body of M.O.H.s for the first time. What were the aims and objectives of this new national association? Herbert Manley described them as being both "academical and the other political." ⁵⁷ Both aspects of this work were part of a co-ordinated programme to make "persistent and strenuous individual and collective efforts" to represent the interests of all members of the profession.⁵⁸ As Manley pointed out, when he joined the Society he considered it an association by which his interests as a M.O.H. would be protected,

from whom I should be able to receive not only instruction but adequate support in

the dangers and difficulties of my
office. ⁵⁹

The political nature of this role had caused it to
be termed, by some, . a trades union.

Some people have called us a 'trades'
union; and much as others may dislike
the title I think there is much to be
said in its favour. ⁶⁰

This was not a universal view amongst members. How
the Society represented the interests of its membership
reflected the kind of status that it aimed at for them.
In the mind of many of Manley's colleagues, any remote
association with a trades union was to be avoided at all
costs. The period following the amalgamation of the
Society was vital for securing the professional status
of preventive medical practice. It is to these years
of consolidation amongst M.O.R.s that we now turn.

Committees and Their Work: An Overview 1889-1911.

The business of the Society was carried out in Council
and through its appointed committees. The ordinary meet-
ings of the whole Society were held five times a year
when the Council would report its proceedings, votes were
taken on individual issues and papers by guest speakers
would be given. The Council received, through correspondence
with the secretary , the representations from the branches,
or occasionally individuals or other societies. If any
of the issues raised were of a sufficiently detailed or
significant nature they would be referred to a committee
for consideration. The committee would report on its
investigations periodically for a vote to be taken by
the Council or put to the Society as a whole. Committees

set up for these purposes were either permanent, standing or for a limited period only.

In the early 1890s the standing committees were the Finance, Publications and Journal Committees. Finance was always presided over by the treasurer of course, the Publications Committee by the president, and the journal's by the editor. The work of the Finance committee was uniform and remained unchanged from the days when it was first set up for the Metropolitan Association during the 1850s.⁶¹ Basically the committee collected the subscriptions of members and paid the Society's bills. The books were finely balanced and any surplus went into publications. The Publications Committee dealt with any special items which members expressed an interest in, e.g. the translation and publication of a treatise on hygiene or public health from Europe or elsewhere. It also dealt with the financial aspect of publishing the journal. During this period a controversy arose over the suitability of the Collieridge Co. as the publishing house for the journal. The tender which they submitted in 1892 compared unfavourably with its competitors.⁶² The question of payment of contributors to the journal however was left to the discretion of the Journal Committee itself. The Editorial Committee left very little record of the details of its work. There is no evidence for example of any discussion on the editorial policy or direction in the selection of material or preferred content of the journal. The most major discussion occurred in 1897 when the plan to alter the layout and format was put

before the Council for approval.⁶³ There were differences in editorial emphasis however between different editors.⁶⁴

During 1892 a temporary committee was set up to deal with the scheme to incorporate the Society under the Companies Act of 1866. Shirley F. Murphey chaired this but most of the work was largely undertaken by Henry Jones the Society's appointed counsel.⁶⁵ Documentation of its proceedings were sparse in the records of the Society since most of the legal transactions with the Board of Trade would be in the documents of Jones' office itself, if any remained. There was however some evidence of conflict between provincial and metropolitan officers over the new Council structure to be instituted in the incorporated body. A letter was read at the meeting of the Committee 8th April 1892, from Henry Armstrong which suggested that one quarter of the new Council should retire annually without qualifying for re-election. Also that the combination for election to the Council should come from members of the Society other than those who currently held office during the year of election. These proposals were never reported by the Committee to the Council. The six committee members had all held office in the Society for over twenty years and spent a very short time dismissing Armstrong's reforms to
⁶⁶
 remove them.

Parliamentary legislation was monitored by a temporary committee from 1889 which eventually was made a permanent one. It considered legislation which was already being prepared for or enacted on the statute books and proposals of

amendment bills or new legislation. The work of the committee was highly detailed and of central importance to the Society and some of its main discussions covered: the Local Government Act, 1888, the Public Health Scotland Bill, the Food and Drugs Act, River Pollutions Bill, the Housing of the Working Classes and Metropolitan Government Acts, all between 1890-1900.⁶⁷ The preparation of the Infectious Diseases Notification Act of 1899 was of such concern to the Society that the Council set up a separate sub-committee to follow it, headed by the secretary in 1898, Herbert Manley.⁶⁸ In the same way the issue of Tenure and Superannuation was investigated by another sub-committee chaired by Reginald Dudfield. After 1900 the Parliamentary Committee turned its attention toward the new regulation of the Census Acts and the codification of the public health laws. New sub-committees were set up to consider the proposed registration of midwives and new laws relating to the inspection of school children.⁶⁹

The longest temporary committee of the period was set up in 1894 to deal "as soon as possible" with the issue of the Conjoint Board of Examiners for sanitary inspectors.⁷⁰ The negotiations for representation of the Society on the Board however extended beyond anyone's expectations until 1897 and the committee, together with its chairman Thomas Orme Dudfield became a semi-permanent fixture of the internal politics of the Council.⁷¹

The work of the committees only partially reflected the range of issues which concerned the entire membership. A complete picture of which could only be gleaned from the details of papers and discussions within the branches and the Society as a whole. The underlying values, aims and goals of the membership were mediated however through the concentric discourse in the central decision making arena within the management of the Society.

Consolidation of Professional Status: Tenure and Superannuation.

In 1854 a Select Committee of the House of Commons was appointed to consider the position of the Medical Officers of the Poor Law.⁷² Their recommendation to the House was that officers should not be removed from their appointments until they die, retire, or resign, without the consent of the Poor Law Board. In February 1855 the Board issued a general order to all unions which came into effect from 24th June 1857,

Article I - Every medical officer of a workhouse duly qualified at the time of his appointment according to the regulations of the Poor Law Board then in force, shall hold his office until he shall die, or resign or be proved to be insane by evidence which the Poor Law Board shall deem sufficient or become legally disqualified to hold such office or be removed by the Poor Law Board.⁷³

Under the Public Health Act of 1875 the same 'powers' which were conferred upon the Poor Law Board were given to the Local Government Board in relation to the appointment of M.O.H.s. From the first appointment of M.O.H.s under the 1855 Metropolitan Management Act the Society had aimed to achieve the same security of tenure as that

enjoyed by the state general practitioners. Indeed in 1864 when the Superannuation of Poor Law M.O.s was under review the Metropolitan Association had pressurised Simon's department for the inclusion of an M.O.H. tenure clause in any proposed legislation to be considered. However as Thomas Orme Dudfield pointed out in 1895, the Local Government Board had still not enacted the powers provided for them to achieve this end in the 1875 Act.

and in fact they have declined to sanction the proposals of sanitary authorities who had been willing to place their medical officers in respect of tenure of office in the same position as the district medical officer of a Union! ⁷⁴

The frustration of the Society with the lack of support from the L.G.B. led them to investigate every avenue for freeing their members from the constraints which annually renewable appointments placed upon them. The result of this latter system was the notorious manipulation of M.O.H.s by the vested interests of the vestries and municipal corporations which constituted the district sanitary authorities. In this respect the passing of the Local Government Bill in 1888 was in the view of the Society a missed opportunity to place the responsibility for the appointment of district medical officers of health in the hands of the newly created County authorities.

The 1888 legislation transferred the powers of the L.G.B. to create new sanitary districts from the combination of small areas to the County authorities. The County would also be responsible for the regulation of the duties, salaries and qualifications of the M.O.H.s of the district authorities. The first response to the Act

was tentative. In an editorial summarising the most relevant features of the bill, Wynter-Blyth. pointed out that the possession of powers of reform did not necessarily mean they would be instituted.

It is a fruitful theme for conjecture what use the county councils will make of these powers - whether they will simply register the acts of the district councils, or whether they will seek, by gentle or more effective pressure, to attain in their respective areas a sound administration of the sanitary acts.⁷⁵

Wynter Blythe however was prepared to give the new authorities the benefit of the doubt. He suggested that for M.O.H.s with such insecure contracts of employment, limited independence and neither salary nor social position commensurate with the importance and responsibility of their duties, any change offered hope.

The bill is big with promise; small will be the immediate results, but in time it may produce a very considerable change in the whole health administration.⁷⁶

The response of the Society as a whole however was far less optimistic and concentrated alternatively on the serious "blot" in the legislation, namely that the power of appointment and dismissal of M.O.H.s was not transferred to the county but remained with the district authorities. The Council met on April 20th 1888 to discuss the issue and presented a report for adoption by the Society that evening. The resolution stated that,

as the Bill proposes to transfer to the County Councils the powers for uniting sanitary districts for the appointment

of medical officers which are now vested in the Local Government Board, it is desirable in the interests of increased efficiency and economy that these powers should be generally exercised as regards all urban and small rural districts, and that the appointment of medical officers of health should be entirely vested in the County Councils, instead of being primarily in the District Councils, as at present provided by the Bill.⁷⁷

The Council's resolution did not deal however with a number of additional concerns of Society members. Firstly, as Francis Bond pointed out, there was no provision in the Act requiring the county to appoint any "competent advice or assistance" to undertake their new sanitary responsibilities. Secondly there was no indication of the appropriate size of the new combined districts. There were strong feelings expressed at the evening meeting regarding this. There was one body of opinion which made it clear that they wanted to see sufficiently large districts created that would "raise their status".⁷⁸ George Wilson, (M.O.H. Mid-Warwickshire) suggested that the Council's resolution was inadequate in this respect. The Society should state openly that they disapproved of 'nominal' appointments to small rural and urban districts. He believed that general practitioners holding 'nominal' posts as M.O.H.s for which they were unqualified and unable to undertake any responsibility, in order to receive a 'token' salary was an anachronism and antithetical to the whole purpose of public health administration. The Council should, in Wilson's opinion, express a clear policy supporting the abolition of such appointments.⁷⁹

There was outspoken agreement for Wilson's view from Francis Bond, Drs Hime and Fosbroke, John Tatham and Edward Seaton, who stated that the figure of 100,000 population which had been recommended as the appropriate size of combined districts by Lyon Playfair during the reading of the Local Government Bill, was insufficient. Seaton believed that,

If they wanted a good sanitary service they must have something like prizes in the profession; in districts of only 100,000 he took it there would be none.⁸⁰

Despite these arguments however there was an alternative view expressed by some members who were concerned for the officers of small districts being "squeezed out". This latter view prevailed and when Dr. Hime (M.O.H. Bradford) forwarded a resolution articulating Wilson's demands for presentation to the Local Government Board, it failed to gain sufficient backing from the meeting and was withdrawn.⁸¹

The membership endorsed the original resolution of the Council instead. It also supported the Council's decision to form a committee in conjunction with a group of representatives from the Parliamentary Bill's Committee of the B.M.A. to present their report to the president of the L.G.B. Sir John Lubbock, Mr. Stansfeld the author of the bill, and Sir Lyon Playfair. The result of the labours of this conjoint committee was the introduction of three amendments to the bill by Mr. Stansfeld which eventually were passed by the House. The sub-clauses of section 17 of the Act provided the county councils with permissive powers to appoint an

M.O.H. to the authority to undertake their sanitary responsibilities. There was no transfer of power of the district authorities and no mention of any regulation of the size of combined areas.⁸² Later that year, 16th November 1888, Francis Bond read a paper before the Society which summed up the disappointment at the minimal amendments and enabling legislation. The fighting spirit of George Wilson was expressed as strongly as ever during the discussion and he stated that,

it behoved this Society to take up a clear and well-defined position with respect to this question, so that it might help to influence public opinion in the right direction.⁸³

The majority of M.O.H.s remained employed in their districts under the terms of a new L.G.B. order issued in 1891 which stated that the local authority should determine the period of his tenure. A major development occurred during that year however as the result of the Public Health (London) Bill which reviewed the position of metropolitan officers providing that they should be removed only by their local authority "with the consent of the Local Government Board, and not otherwise."⁸⁴ Also that "any such medical officer shall not be appointed for a limited time only."⁸⁵

The achievement of tenure for the metropolitan officers increased the pressure within the Society for securing the same for provincial officers. A degree of informal code of conduct had developed between some provincial authorities and their officers and there were many who held their post for decades without their appointment ever being secured legally. Many cases of

gross injustice and impropriety by individual town and borough councils, and district authorities continued, however, and were widely condemned by the Society as scandalous.⁸⁶ Their view was often supported by other branches of the profession. For example individual cases would be reported to the Society for their attention such as in January 1895, when the Nottingham Medico-Chirurgical Society sent a resolution to the Council of the S.M.O.H. deploring the circumstance in which Joseph Carrioll had been deprived of his appointment at Ilkeston.⁸⁷ Their memo suggested that such events justified the Society making the "strongest appeal to the Government for speedy change in the existing law affecting the appointment and and tenure of the medical officer of health."⁸⁸ Support came from the Lancet and the B.M.J. which often published cases that came to their notice. In February 1896 for example the Lancet wrote an editorial on the actions of the Farnborough Council who had advertised the post of their M.O.H. as available for tender.⁸⁹ The Council of the S.M.O.H. sent a memo to the L.G.B. using the Farnborough case to illustrate the way in which the competitive, marketable commodity status of the M.O.H. undermined the entire function of the office.⁹⁰ The B.M.J. gave additional support, with a comment on the Farnborough case during April.⁹¹ The cumulative pressure resulted in the L.G.B. forcing the Farnborough council to re-advertise the post with a fixed salary.⁹²

Salaries however were rarely fixed at a satisfactory level. Occasionally the local authorities seemed completely to disregard the value of the office. For example in 1889 the London School Board advertised for its first medical officer, hoping to attract an experienced M.O.H. to take up a specialist post. The Society's journal compared the action of the Board to the character of Greysbury in Dickens' novel Nicholas Nickleby.⁹³ The Board advertised the post as being full-time with a salary of £400 per annum. The successful candidate was no less than William Robert Smith. At the news of his appointment the journal congratulated the Board on managing to get such a distinguished individual. The editorial was incredulous that the appointment remained full-time for such a salary, for such a man. The end result was that Smith retained all his other appointments in addition to his work for the Board.⁹⁴ In 1892 the journal's editorials, now under the direction of Arthur Newsholme, expressed concern about the possible reduction of value of salaries. The range of salary at that time was described as being between £400, for a rural or small urban district, such as had been advertised for Poplar and Norwich that year, and £800 for a full-time appointment to a large urban district. The editorial referred to a recent advertisement by Stockton town council which combined the appointment of M.O.H. with that of M.O. to the fever hospital and local police surgeon, all for a salary of only £300 per annum. The fact that Stockton would

probably obtain a highly qualified officer was disturbing.

This does not make it any less the pity that in the present stage of uncontrolled competition local governing bodies are able to obtain skilled work at the price of unskilled work.⁹⁵

The editorial stated that whether any 'effective combination against it would be successful was impossible to determine.' It was clear that unless something was done to stop it salaries would fall from their present level to a range of £300 -£500. An advertisement in the following edition of Public Health by Croydon rural sanitary authority for a full-time M.O.H. to cover a district which was 21,872 acres large for £400 a year, plus travel expenses, only served to confirm these fears.⁹⁶ The function of these salary levels, as Dr. Eustice Hill, (M.O.H. County of Durham) pointed out in his annual report during 1892, was to imply that the authorities were either entirely ignorant of the responsibilities of the office or that they intended the M.O.H. to reduce the amount of work done. He suspected that the extremely low salaries of some of the 'nominal' part-time appointments in small rural districts of less than 10,000 people, of £15 -£25 per annum, were intended precisely for this purpose.⁹⁷

The system thus perpetuated three classes of M.O.H. There were those who remained in part-time, and occasionally nominal appointments with minimum salaries, unable to fulfil any of the duties of a public health department sufficiently. Secondly there were full-time officers, often highly qualified including the possession

of a D.P.H., who had renounced private practice for an insufficient salary in recompense for his responsibilities and who remained annually dismissible, without any right of appeal. Finally there were the metropolitan officers who had achieved the rights of tenure, compulsory qualification and full-time status, which enabled them to complete the functions of the office in the way it was intended by the public health statutes.⁹⁸ There were members from all three classes of M.O.H. within the Society by the 1890s and each demanded the representation of interests by it. These divisions had their consequences. As Alfred Bostock Hill pointed out:

One reason, he thought, why the matter had not come to a satisfactory issue before was, that the provincial officers of health had had but little sympathy from their metropolitan brethren, who held office under different circumstances.⁹⁹

Ultimately, Hill warned, the interests of all officers would have to be pursued if the profession was to survive and flourish. The metropolitan officers could not afford to go on,

simply regarding this matter with benevolent neutrality.¹⁰⁰

Benevolent neutrality was occasionally exemplified by Wynter Blyth for example, when he was asked to examine the legal aspects of the issue of tenure in 1893 and replied that he did not see why provincial officers should feel so insecure. Those in urban districts he pointed out were employed under the 189th section of the Public Health Act which stated that an urban authority should appoint an officer "at their pleasure." He felt that this

could be interpreted to mean the authorities' pleasure would continue without the necessity for the renewal of contract, whereas fixed terms of employment, such as five year contracts, meant the M.O.H. had to stand for re-selection. Even he recognised though that the tenure of provincial officers was not ideal, but he believed that the best answer lay in the control of recruitment to appointments. Such control could be excersised in two ways; firstly through the regulation of standards for the qualification of the D.P.H. which, as Blythe pointed out, was currently underway in 1893; secondly through the limitation of competition through firm combination¹⁰¹ amongst the profession itself.

There were sections of the Society's membership who did not welcome reform at all. Henry May (M.O.H. for Aston Manor) argued the case for the general practitioner in nominal districts. During the same debate within the Society in 1893, he pointed out that whole-time appointments only prevented an M.O.H. from practising curative medicine. Such officers still supplemented their income by combining the office of a public analyst, superintendent to a fever hospital, a parochial or police appointment or a teaching post in medical jurisprudence and hygiene with their public health work.¹⁰² He defended the general practitioner in a nominal post as being "not so bad as he is painted". May suggested that instead of abolishing them through the combination of districts their efficiency could be improved through the guidance and supervision of a county officer.¹⁰³ He added weight to this argument by reminding his fellow

members of the Society that general practitioners holding such posts were numerous within it. Moreover, they expected support from the Society rather "than by the assertion of such doctrine as this" an attempt to discharge them.¹⁰⁴

This doctrine however, indicated first by Wilson in 1889, was extended and re-asserted amongst full-time provincial M.O.H.s as the debate continued within the Society. Fredrick Adams, (M.O.H. Bolton), John Thresh (M.O.H. Essex) and Edward Seaton all contributed articles to Public Health during October 1892 demanding the closing of the Society's ranks against part-time appointments. Adams pointed out that the whole fight for security of tenure should be governed by the circumstances and nature of appointment. Tenure should be fought for in his opinion in the case of full-time officers only. If nominal appointments became permanent it would only encourage authorities to perpetuate them, to the great advantage of their local oligarchy but to the great detriment of the public health service and the community at large, which would be left without any hope of ever possessing an efficient preventive administration. The situation he suggested grew increasingly worse.

The grievously overcrowded state of the curative department of our profession is causing a serious overflow into the preventive branch, with the result that the competition for even the most ill-paid sanitary appointments becomes keener and keener every day.¹⁰⁵

Adams reported that there had been some suggestions that general practitioners taking up such appointments should be banned from membership of the Society. His own view

was that this would not be the answer to the problem. . He felt, like Winter-Blyth, that the control of examination standards of the D.P.H, restricting the number of entrants into the preventive profession and solidarity amongst M.O.H.s against the market forces devaluing their labour would be the most effective means of consolidating their professional status.¹⁰⁶ These sentiments were echoed entirely by John Thresh but he distinguished the act of 'combination' from 'union agitation' to increase remuneration, which he believed would be both unprofessional and useless. The problem was an excessive supply of medical labour which was subject to the same laws of economic behavior as that of "miners and dockers". Oversubscription would lead to competition which resulted in devaluing the status and remuneration of the office.¹⁰⁷ The answer was clear for Edward Seaton, who saw the fight for tenure as intrinsically linked to the fight for the creation of combined districts and whole-time appointment of strictly qualified officers at a sufficient salary which would enable them to live without additional employment to supplement their income.¹⁰⁸

The issue of restrictive educational standards in the D.P.H. was taken up fully by the Society which held a debate on the training and qualification of M.O.H.s in December 1894. Arthur Ransome, professor of chemistry at Victoria university at Manchester, was invited to speak to the membership on the improvements which he felt were necessary for the D.P.H. He pointed out that the special training in the post-graduate courses on

hygiene, a medical practitioner was able to do only half the work involved in the public health office. He could, for example, declare a source of water supply as unwholesome as the result of tests but could not undertake the chemical or bacteriological work himself.¹⁰⁹ Henry Armstrong, John Thresh and John Sykes all took part in the discussion and stressed the need for greater emphasis to be made in the D.P.H. curriculum on laboratory and practical work and the need for out-door tuition in sanitary districts.¹¹⁰ These were the very features of the D.P.H. which the G.M.C. were to use in order to control the number of candidates qualifying and to eliminate the general practitioner from the preventive licence.¹¹¹ Arthur Ransome warned that making the licence too exclusive however, would "foster a spirit of clique" amongst M.O.H.s. To which Armstrong replied decisively.

Is it not a fact that the practitioners of preventive medicine are a distinctly separate caste of their profession? 112

Despite these explorations of various policies for controlling the professional status of the office the line ultimately pursued by the Society was narrow and singleminded. The Council received a resolution from the Birmingham and Midland branch demanding action from the Society on the tenure of provincial officers. W.T.G Woodforde presented a statement to the Council at a meeting on the 17th December 1894"

It is desirable that similar provisions to those of the Public Health (London) Act 1891 Section 10 clause 1 and 2, paragraphs b and c should apply to all medical officers of health in England and Wales. 113

The Council arranged for a deputation of their members, together with representatives of the B.M.A., British Institute of Public Health, and the Sanitary Institute, to present the resolution to Sir Walter Foster, who had become the parliamentary private secretary to the L.G.B.¹¹⁴ The deputation attended the meeting on March 8th 1895. Henry Armstrong spoke on behalf of the S.M.O.H. providing the Board with the statistics of the appointments which had resulted from the 1888 legislation to support their argument. From a return of the House of Commons he quoted the statistics of appointments which had been made since the 1888 Act. In 65% of rural districts, of both the southern and northern counties, M.O.H.s were appointed for one year only. The same was true for an average of 40%¹¹⁵ of urban districts and 30% of port authorities. The short tenure was unnecessary and "a public evil", Armstrong asserted, and he and the other members of the delegation demanded an end to the system, which it was in the power of the L.G.B. to do. Tenure alone was demanded, however, without further qualifications about whole-time appointments or the combination of districts.¹¹⁶

Walter Foster was sympathetic to their demand and reminded them of the part he had played in obtaining tenure for the metropolitan officers in the 1891 Act. There was no doubt, he said, that the L.G.B. acknowledged the problems of short term contracts. He also recognised that,

there is a strong feeling on the part of the profession that a large central authority to administer the Acts relating to the public

health of the country would be the best method dealing with the matter, but legislation has gone too far in the other direction.¹¹⁷

It was true that amongst many M.O.H.s the need for a government department of health separated from the poor law administration had already been articulated. Adams, Thresh, Seaton and even the guest speaker to the Society during 1893, Arthur Ransome, had included this proposal in their discussion.¹¹⁸

Despite his sympathy however Foster had nothing to offer the delegation, apart from advice to individual officers to exercise sufficient tact with their authorities in order to keep their jobs. He also suggested that the profession should control competition amongst their ranks. The latter was a major factor, he believed, in the whole issue. The L.G.B, he claimed, could

have been able to do a great deal more if we had had that co-operation of the medical profession which we ought to have had, but unfortunately the medical profession is a broken and disorganised body.¹¹⁹

The practice of tendering their labour for low salaries would continue to undermine the value of the M.O.H. and Foster urged the deputation ,

to raise the position of the medical officer of health..... by being true to yourselves and by not letting these undignified proceedings occur.¹²⁰

The result of the meeting characterised the attitude of the L.G.B. which would remain throughout the following years of struggle by the Society for tenure.

The line pursued during the deputation set the principle for subsequent campaigning. In December 1896 it was proposed by the Council to re-open the discussion.

Notice was given that Thomas Dudfield and William Woodforde would present memoranda summarising the position of the Society on the issue at the next meeting of the Society. Before the meeting took place however Edward Seaton wrote and published a letter to Reginald Dudfield, at this time the secretary of the Society, taking him to task for narrowing the issue to "tenure" alone.

this question appears lately to have been discussed entirely without reference to the essential difference there must be, in the eyes of the whole profession at any rate, between M.O.H.s who are making "public health" their life work, and officers of health whose main work is that of general practice.¹²¹

The way in which the Society pursued the issue of tenure would determine the system of public health administration that would predominate in the future: i.e. perpetuating the existing system of general practitioners in tiny localities, or bringing about a restructuring of the entire system on the basis of combination. Seaton was certain about his own position. This issue was about more than simply achieving security for individual officers, it was about reforming the structure of administration as a whole. The question of tenure for the public health specialist was inherently linked to this and he stated openly that any retreat from it would be a policy he could not support.¹²²

Dudfield and Woodforde presented their memoranda in December but after discussion at a meeting of the Council on January 16th 1896 a set of four resolutions was presented to the Society. These included one which stated that fixity

of tenure should be dependent on the circumstances of the appointment and the qualifications of the officer. Resolution I simply reasserted the demand for provincial officers to be given the same terms of contract as that of metropolitan officers. Resolution II stated however,

That in the question of this Society the Local Government Board should be asked to make fixity of tenure dependent on such an arrangement of sanitary areas and salaries as will secure medical officers of health of suitable qualification.¹²³

Resolution II encapsulated Seaton's view, but had been prepared and proposed by Herbert Manley. It received absolute opposition, however, from Alfred Bostock Hill. He felt bound to speak on behalf of the members of his branch who were precisely the 'non-specialist' officers who would be excluded if the Society's policy on tenure was to follow the line of resolution II. Hill warned that the metropolitan members of the Council should not lend their support to it on the grounds that this was not their fight and they should keep out of it.

their interests are already served and they are outside the scope of the resolutions.¹²⁴

He thought policy should be decided therefore through a consultation with the provincial branches. Each branch should be given the opportunity to vote on the resolutions.

At the meeting of the whole Society on the evening of the 16th January the row flared up with dissenting views coming from every quarter. Sidney Barwise attempted to resolve the issue with a new resolution which modified the statement while retaining its original intention:¹⁵ He was supported by Armstrong who felt that Hill's

proposals would,

by their own act be confirming and helping to perpetuate a very bad system, viz that of small miserable appointments.¹²⁶

Armstrong was also critical of both Seaton and Hill for setting themselves up as representative delegates of their branch members within the Society. He did not like

a member to assert that he came there as a mere delegate; that put them too much on the level of a trade union.¹²⁷

The row released all manner of hitherto hidden views.

Ashby and Kenwood for example doubted whether the agitation with the L.G.B. would actually achieve anything. They both suggested that the record of the L.G.B. in ignoring the pleas of the Society in the past did not indicate that they would be any more receptive in the future.¹²⁸ Reginald Dudfield accused Kenwood of forgetting that without continually pressurising the L.G.B. they would never make any gains at all. The Board would then be able to ignore them completely.¹²⁹ No reconciliation was achieved and the meeting ultimately decided to present the resolutions to the branches for their consideration.

The response from the branches gave almost unanimous support for Hill's proposals to eliminate resolution II from the Society's policy.¹³⁰ All that is except for the Home Counties branch, of which Seaton was president, that opted for a deferment of the issue until new public health legislation was before the House.¹³¹ The Scottish branch also unanimously supported Manley and Seaton. Scottish M.O.H.s had achieved security of tenure under the terms set out in resolution

II which had been included in the Public Health Scotland Bill passed in 1889. The Scottish members believed that it was imperative that the provincial officers of England and Wales should also seek to obtain the same reforms. ¹³²

The subsequent debate continued in a meeting of the Council on February 20th 1896. New opposition was forwarded by Joseph Groves (M.O.H. Isle of Wight) who moved an amendment to eliminate resolution II on the basis of branch response. He believed that if Seaton's views were to prevail they would lead to the formation of two Societies for M.O.H.s. The largest one by far would, he asserted, be that which contained the part-time M.O.H.s in general practice. Groves made a personal attack on Seaton himself, accusing him of holding nothing but "pious opinions" without regard to reality.¹³³ Armstrong was not going to let this or the "exhortations" of Bostock Hill go unchallenged. He said that Seaton's view on the reformation of status was concerned with ethics and the protection of the community. Armstrong felt strongly that the Society should be prepared to sacrifice membership numbers for the more important aim of securing professional status and efficient systems of administration.

Whom would they drive away? Those who attempted to raise the profession, or or those who represented trades unionism? Which side would Dr. Bostock Hill go to? ¹³⁴

Armstrong "begged them not to lose sight of the principle of status in the interests of pocket."¹³⁵

The vote went however in favour of Groves' amendment at which point Alfred Ashby attempted to counter it with the Home Counties branch' proposals that the whole issue should be deferred until the next round of public health legislation. Hill retorted adamantly that if they did not proceed with their demands now to the L.G.B.,

it would appear as if they had not the pluck to push forward a resolution which a large number of the branches had distinctly voted for. They had already made representations to the Local Government Board, and had no right to defer the matter now.¹³⁶

Ashby's amendment was lost and a motion for the Society now to adopt the original three resolutions of January 16th, without resolution II, was passed by twelve votes of the Council to seven.¹³⁷

The mood of the Council was clear. Whether trade unionist or not, Armstrong had only one interpretation of unionism, Herbert Manley had another, general practitioners were not going to die easily in the provincial public health service. In the meantime however yet another tactic was already being considered by the Council. In October 1895 the Metropolitan branch had been approached by the Municipal Offices Association to appoint delegates to a Conference of Local Government Officers on Superannuation. Legislation was being prepared at this time for superannuation to be granted to poor law medical officers. The Conference was to consider the possibilities for extending the law to

to include all other local government officers. The Metropolitan Branch presented the invitation to the Council of the Society which agreed to send three delegates to it. The other Societies represented at the Conference were, the Sanitary Inspectors Association, the Metropolitan Rate Collectors Association, the Institute of Municipal and County Engineers, the Society of Public Analysts and the Municipal Officers Association themselves.¹³⁸

The report of the S.M.O.H. delegation back to the Council summarised the proceedings as :

The unexpressed opinion of the meeting was that efforts should be made to keep with the Bill to be promoted by the Poor Law Officers in the idea that superannuation having been granted to these officers there would be a good precedent for granting of of the same to Sanitary Officials.¹³⁹

The Council formed a committee to monitor the passage of the bill and to investigate the feasibility of including the fixity of tenure of M.O.H.s in any future superannuation bill for local government officers.. The committee formed, consisted of William Woodforde, Edward Seaton, Herbert Manley, Henry Armstrong, Charles Paget, Oliver Field, Thomas Dudfield and James Spottiswood Cameron.¹⁴⁰ It was chaired by Francis Vacher, the president of the Society during 1895-'96. The function of the committee was to communicate directly with the L.G.B. but also to liase with the B.M.A. and the other associations involved. Throughout 1896-'97 they developed a set of proposals for a new superannuation bill on the basis of the poor law legislation. It was imperative the

committee suggested that any scheme should include the payment of subscriptions from officers into a central fund and that payment from local rates should not be considered. Also, the appointment of M.O.H.s for limited periods should be abolished by the Act. The dismissal of M.O.H.s should be made illegal without the consent of the central authority, i.e. the L.G.B. or any future ministry of health.¹⁴¹

Copies of the resolutions incorporating these proposals were sent to the L.G.B. and members of parliament involved in the promotion of new legislation, and the B.M.A.¹⁴² A bill was drafted and introduced into the House during 1898 but it was not debated or given serious consideration during that year. The Local Authorities' Officers Superannuation Bill however did not remain the only one to be re-introduced into the next session of Parliament during 1899. A proliferation of bills dealing exclusively with sanitary inspectors, school attendance officers and another for inspectors of weights and measures were all planned.¹⁴³ Already in December 1898 the new editor of Public Health, Reginald Dudfield, had doubts about the efficiency of a multiplication of statutes. The journal's editorials suggested that none of these Acts would be successful unless the Government could be sure they had the support of the local authorities. The L.G.B.'s attitude had been demonstrated on each occasion that the question had arisen. Sympathy would not be translated into action until the consent of the local authorities had been secured. The same

principle was at work in the case of superannuation as had been in the issue of tenure. For this reason Reginald Dudfield aired doubts about the effectiveness of the Conference of Municipal Officers which was based in London only. Political pressure in this instance, he felt, had to be brought to bear, not upon central government but in the local districts in the provinces.¹⁴⁴

The superannuation legislation continued to be delayed through lack of support by the L.G.B. and by 1899 Dudfield's editorials, in Public Health, positively condemned the uselessness of the Municipal Officers Conference. The all-embracing scheme contained in their single bill dealing with local government officers ignored the different circumstances in which each group were appointed, he claimed. Dudfield suggested instead that a new line of action should be adopted, i.e. that the S.M.O.H. should pursue an individual bill dealing with M.O.H.s and sanitary inspectors specifically.¹⁴⁵

Dudfield's father, Thomas Orme Dudfield, had already been engaged in this line of action in the Society's sub-parliamentary committee on superannuation. On January 12th 1900 the committee reported to the Council a set of modifications which they had made to a B.M.A draft bill which had been drawn up during 1899. On reviewing the draft the committee had decided that the original title of the B.M.A. bill was not accurate. Instead they proposed that it should be called the Medical Officers of Health and Sanitary Inspectors Bill 1900. Three clauses should be clear. Firstly, tenure

should cover existing officers in post on the date of the legislation as well as new officers appointed afterwards. Secondly, the superannuation fund should be managed closely, deducted from salaries through compulsory payments, deposited into a central fund and placed under the authority of the L.G.B. alone. Lastly, there should be a specific clause preventing any officer from contracting out of the scheme.¹⁴⁶ Clearly the committee were remaining firmly committed to the resolutions of the Society on tenure which they passed in 1896. They were as intent as ever on supporting the general practitioner in achieving tenure in small districts, though how this would be reconciled with compulsory superannuation payments from nominal salaries was never taken up by the committee or the Council.

The British Medical Association re-drafted the bill, and it was introduced before Parliament on May 2nd 1900 by Robert Farquharson. It was withdrawn in July however due to lack of time in that session for it to be debated. It was re-introduced the following year, April 2nd 1901, by Sir Francis Powell, and was supported by Sir Michael Foster, R. Farquharson,

Charles Alfred Cripps, Henry Hobson, Talbot Heywood, Johnstone, and Henry Hobhouse.¹⁴⁷ It continued to be delayed, however, until it was withdrawn altogether in 1905. That year A.J. Balfour appointed his brother, Gerald, to preside over the Local Government Board replacing Walter Long. Gerald Balfour opposed the superannuation bill. He received a deputation from the Society together with representatives from the B.M.A. and the Institute of Public Health and stated: his objections clearly to them. The retrospective right of tenure provided for in clause

II of the Act would fail, he pointed out, to discriminate between highly and underqualified officers, whole-time and part-time appointments.¹⁴⁸ Edward Seaton, and his lobby within the Society, must have felt finally vindicated.

Lack of support from the L.G.B. and the dispute over the basis of tenure continued to block the passage of the legislation. County M.O.H.s obtained security of tenure separately under the Housing and Town Planning Act of 1909.¹⁴⁹ Universal tenure under the terms of the B.M.A. bill was achieved under the Public Health (Officers)Act in 1921.¹⁵⁰ A complete service of whole-time officers with fixed tenure was not achieved until a new Local Government Act in 1929 abolished part-time appointments.¹⁵¹

Notification, Isolation and a Unified Health Service, 1889-1911.

In 1889 the Notification (Infectious Diseases) Act enabled individual sanitary authorities to adopt a system of compulsory notification. The underlying principle of the system was to use the occasion for the treatment of infectious disease to prevent its spread. Under the Act, a dual system of notification was established. Before the Act had come into force there had been experiments with both single and dual systems but both resulted in more or less a single mode of information being forwarded to the M.O.H. by the medical attendant to the case. The head of household wherein a case of infectious disease had occurred was also under an obligation to notify it under the dual system

but rarely was such action undertaken. Because the dual system was employed, however, the Act listed not only those diseases which by necessity incurred a visit from a medical attendant, i.e. small-pox, scarlet fever, diphtheria, enteric fever, typhus, cholera, typhoid and erysipelas but also those which were often treated only by the family in the house, i.e. measles and whooping-cough. The procedure of notification was facilitated by the issue of stamped forms to every general practitioner in the district, from the M.O.H.'s office. His own inspectors had additional stereotyped report sheets which were completed on visiting the household notified, having made their inquiries and located the source of the disease.¹⁵² The system required a co-operative relationship with the general practitioners of the district. This could not be achieved if the M.O.H. was either tactless, in re-diagnosing a case for example, or engaged in private practice himself and thereby in competition with his medical colleagues. Even if a generally good relationship existed between practitioners and M.O.H. in the district, the system occasionally received opposition from individual doctors who neither understood the system or did not recognise the value of it. For example Alfred Bostock Hill discovered that fourteen cases of diphtheria in his area had not been notified to him by the practitioner who attended them. On contacting him, Hill received a reply which stated that since there was no chance of improving the sewers, which he took to be the source of the disease and the only method of preventing its dissemination, the G.P.

concerned believed there was no point in informing the M.O.H. of the cases which he had attended. Hill replied back to him, that preventing the spread of diphtheria involved measures of isolation and disinfection which depended entirely on knowing where incidence of the disease occurred. Hill listed the seminal points in the final response of the G.P; firstly, he did not believe in disinfection, secondly he did not see why he should do Hill's work for him, and lastly, he felt that it was the responsibility of the M.O.H. to discover cases of infectious disease through efficient inspection of the district.¹⁵³ These were some of the views which the M.O.H. had to overcome if he were to gain the co-operation needed to make notification work.

Despite these difficulties however, by 1896 the Act was in force in 1,405 provincial sanitary districts with an aggregate population (according to the 1891 census returns) of 18,878,441. After 1891 London also had compulsory notification with a population of 4,232,118. Forty-nine small towns with an aggregate of 3,875,286 population adopted the Act and forty port authorities.¹⁵⁴

The preventive value of notification had a number of aspects to it. The immediate advantage of discovering the location of an infectious disease incidence was that of isolation, either in the home or in hospital, which would reduce dissemination. Another aid was the exclusion from school attendance of the siblings or offspring of an infectious patient during the period of incubation; for

example of a diphtheria victim. Disinfection of bedding, clothing and dwellings could also be completed effectively. The long term advantage of the information collected was for statistical mapping of disease movements within a locality and for comparative analysis between areas.¹⁵⁵

The whole system of isolation as a means of prevention could not be achieved though, without sufficient provision of hospital accommodation. Arthur Whitelegge pointed out immediately after the 1889 enactment, except amongst the wealthier classes home isolation was scarcely practicable:

Without proper facilities for hospital isolation notification loses much of its value, although even registration of sickness is helpful.¹⁵⁶

Hospitals for infectious diseases were provided by the sanitary authority in the provincial districts and by the Metropolitan Asylums Board in the London boroughs.¹⁵⁷ The issue which arose relating to both was the method of funding. Under the 1872 Public Health Act, the provincial sanitary districts were given the power to build hospitals for isolation. The expenses which the authorities incurred were to be recovered from charges made to the patients. When such charges were enforced however, the hospitals remained empty. Some sanitary authorities who provided hospitals did not charge all categories of patient but made distinctions between paupers, poor persons, non-paupers removed either compulsorily or voluntarily, domestic servants, middle class persons able to pay, persons well able to pay

and persons desiring special accommodation.¹⁵⁸ Different methods of recovering expenses for each of these categories of patients was then applied.

The question which concerned M.O.H.s was whether there should be any charge for admission to or maintenance in hospitals for infectious diseases, at all. To discover the broad base of opinion amongst the membership, the Council undertook a survey throughout the S.M.O.H. Henry Armstrong was given the responsibility for collecting and analysing the results. A wide variety of views were expressed. Some were in favour of charges for some of the non-pauper categories. A large number felt that the only charges should be those who chose to be private patients and many were in favour of abolishing charges altogether.¹⁵⁹ At a meeting of the Society on April 11th 1890 a resolution was passed :

That in the opinion of this Society it is desirable in the interests of public health that admission to the general wards of hospitals for infectious diseases should be free, and that the charge, if any for private patients should be at the lowest possible scale.¹⁶⁰

The rationale behind this view was, as Arthur Newsholme pointed out at the meeting, that many local authorities had not grasped the essential principle of non-payment for maintenance. This was that isolation was not an issue of improved treatment but that it was primarily a function of prevention of disease dissemination. Therefore such hospitals were maintained for the benefit of the community and not the individual. Thus the cost should be borne, in his view, by the community, i.e. the local authority revenue.¹⁶¹

The removal of a patient suffering an infectious disease was equivalent, according to the logic of this argument, to the removal of any other nuisance which was the source of an epidemic disease.

The case of the notification/isolation system within the metropolitan area was complicated by its relationship to the poor law authority. From 1867 the M.A.B. had required the order of the relieving officer of a union for a patient to be admitted to one of their hospitals. Admission to an M.A.B. isolation hospital therefore involved the pauperisation of the patient, regardless of his ability to pay. The consequences were the same as that of receiving indoor relief in a workhouse; the loss of franchise and personal freedom.¹⁶² In the case of children or domestic servants the Guardians required payment from the head of the household. Employers refusing to pay, therefore left the victim without treatment to spread the disease.¹⁶³ After 1875, Thomas Duffield had suggested to the L.G.B. that the certificate of any general practitioner should be sufficient for removal without that of the relieving officer. This practice was taken up by Kensington Guardians from 1880 and in 1887 the L.G.B. legalised it with an order to the Metropolitan unions as a whole.¹⁶⁴ Further steps were taken by the Society during 1889 when they made a deputation to the L.G.B. to have a clause included in the proposed Poor Law (London) Act of that year allowing the Asylums Board to admit non-pauper patients, charges for which were to be recoverable from the patients themselves.¹⁶⁵ Some local

authorities in London had already been operating a similar system but the M.A.B. had been accused of managerial extravagance as a result. Consequently, in 1884 the L.G.B. insisted that charges be made recoverable from the sanitary authorities themselves. This system however hindered the process of isolation and thus in the 1889 Act the L.G.B. included a clause which stated that where the Guardians had failed to recover the expense of isolation from non-pauper patients it should be paid out of the Metropolitan Common Fund.¹⁶⁶ The complications involved in pauperising patients in London led the M.O.H.s to seek the same terms of the provision of hospitals as their provincial colleagues already possessed. At the same meeting on April 11th 1890, Dudfield proposed a resolution which was passed unanimously by the Society members present.

That the provision for hospital accommodation for cases of infectious disease should be obligatory upon all sanitary authorities, alone or in combination, and that all such persons whose isolation is enforced or solicited for the good of the community, namely with the view to prevent the spread of infectious disease should have free admission to infectious disease hospitals.¹⁶⁷

The mood of the meeting demanded that hospital provision in London should become separated from the poor law authorities altogether in order to get free accommodation without the pauperisation of the patient. The issues involved in the notification/isolation system which concerned both provincial and metropolitan officers were most clearly illustrated in the question of compulsory notification of pulmonary tuberculosis.

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Robert Koch isolated the tubercle bacillus in 1882. The discussion of its infectivity continued however together with increasing concern about the control of its epidemic proportions. Toward the end of the century concern had grown into a national and international movement. Leaders in the campaign to deal with consumption were numerous, amongst whom Sir Robert William Philip (1857-1939), the founder of the Royal Victoria Hospital for Consumption in 1894 at Edinburgh and the first tuberculosis dispensary in 1887, was one of the most prominent.¹⁶⁹ He also became president of the National Association for the Prevention of Consumption which was founded in 1898.¹⁷⁰ A series of national and international congresses were organised by the N.A.P.C. in conjunction with the international tuberculosis congress which Britain hosted in 1901, Paris hosted in 1905, Washington in 1908 and London again in 1909.¹⁷¹

During the 1890s the prevention of bovine tuberculosis had been an important feature of the work of M.O.H.s. Much was achieved through local by-laws being used to exercise stricter controls over the sanitary conditions of dairies. Although the purification of milk was far from the grasp of the sanitary authorities yet, the distribution of it at least was under their observation and standardisation.¹⁷² There had not been the same degree of success however with any attempt to deal with phthisis.

M.O.H.s had taken up the issue of the infectivity of tuberculosis as early as 1880 when James Niven, then

M.O.H. for Oldham, but he was later to replace John Tatham as M.O.H. for Manchester, undertook the translation of the reports of the German research leading to Koch's discovery. During 1887 he had distributed a pamphlet of instructions throughout his district on household hygiene necessary where a member of the family had contracted consumption. Charles Paget, Niven's colleague in Salford followed his example and drew up a similar document for implementation by M.O.H.s throughout the North Western region during 1892.¹⁷³ Individual efforts however were of little use to the system of prevention of consumption as a whole. The sanitary authorities did not have a major weapon against infectivity of consumption as long as it was not included in the list of notifiable diseases.¹⁷⁴

The major protagonist for notification of phthisis was Arthur Newsholme who instituted a voluntary system in Brighton in 1899. He was aware however that notification could not be successful if the local sanitary authority did not incorporate it into a comprehensive scheme for sanatoria provision. For this reason he encouraged the Society to move cautiously in the direction of compulsory notification. In 1893 he forwarded a resolution which was passed on August 4th,

The Society of Medical Officers of Health, while accepting the view that phthisis is an infective disease, in the prevention of which active hygienic measures should be taken, think it premature to recommend the compulsory notification of a chronic disease like phthisis. They are of the opinion that it is incumbent on medical officers of health to take such steps as to secure (a) the voluntary notification of cases of phthisis by medical practitioners as agree that precautionary measures are desirable (b) the adoption

of such precautionary measures including disinfection of rooms as can be arranged in conjunction with the family practitioner. For this purpose the memorandum prepared by the North Western Branch of the Society would give an excellent basis of action.¹⁷⁵

The resolution recognised the fact that notification was only a means to an end and without the necessary hospital provision it would fail in its preventive objective and simply intrude in the relationship between the patient and his doctor without any results to justify it. The scheme in Brighton had worked only because the authority agreed to pay a fee to the G.P.s for notification and guaranteed free isolation and disinfection and treatment.

Caution on the part of the Society however, and by Newsholme also, was not the result of any uncertainty about the infectious nature of pulmonary tuberculosis being the source of its own dissemination. Objections raised outside the Society to it being included in the list of notifiable diseases questioned this assumption. In 1908 Dr. H. Timbrell Bulstrode completed a report for the L.G.B. on "Sanatoria for Consumptives and Certain Other Aspects of the Tuberculosis Question".¹⁷⁶ The report expressed a lack of enthusiasm for notification since he attached a minor importance to person-to-person infection as a factor in the spread of the disease. The balance of Bulstrode's massive inquiry into the scientific and statistical research on consumption gave more weight to the "soil" rather than the "seed" as being the etiological basis from which to proceed..He used the German example to demonstrate that betterment of the physical constitution of the workforce had been largely

responsible for the reduction in mortality. Physical feebleness was, the report was careful to point out, the result of poor environmental conditions and lack of nutriment. Bulstrode paid particular attention to the work of Karl Pearson on hereditary diathesis, the tendency toward contraction of the disease.¹⁷⁷ The emphasis on the physical well-being of the host led the report to conclude that the administrative control of the public health service was of much less importance in limiting the influence of the disease on mortality than the creation of a health insurance scheme and the improvement of living standards.¹⁷⁸ Bulstrode did not follow through any of the logical conclusions of eugenic programming which was indicated by Karl Pearson's work however.¹⁷⁹

On the publication of Bulstrode's report, James Niven at the request of the new editor of Public Health, George F. McLeary, wrote a lengthy analysis of its¹⁸⁰ implications. He pointed out that much of the research which Bulstrode had examined on infectivity modified assumptions about the "channel of invasion", i.e. whether moist expectoration or dried sputum dust was primarily responsible for infection. Nothing in it challenged the fact that tuberculosis was eminently a communicable disease however. Therefore Niven questioned the meaning, let alone the justification, of Bulstrode's description of the disease as "sub-infectious". Niven did not dispute the importance of receptivity in enhancing the spread of the disease. Emphasis placed only on the soil however would miss the opportunity of eradicating

the seed. Advantages of a notification system meant that homes and workplaces of infectious cases became known; specimens of expectoration could be examined for further diagnosis of the nature of the case; removal to hospital could be planned to segregate the victim at the time when he was most contagious. Not least amongst the advantages, and Niven placed much stress on its value, was the educative opportunity which early notification of the disease facilitated. Instruction in home hygiene precautions could be communicated and monitored by health visitors from the M.O.H. department. Every person thus visited and instructed could be expected, Dr. Niven presumed, to become a "centre of information in the neighbourhood.". He had no disagreement with Bulstrode's conclusions regarding the value of health insurance and the general improvement of physical well-being. There was a need however to link up these systems with the existing preventive administration.¹⁸¹ Notification, hospital segregation, compulsory health insurance were all necessary in Niven's view but,

the chief difference, I think, which exists between Dr. Bulstrode and those who advocated the notification and direct administrative measures concerns the relative importance of the conditioning factors of infection and infection itself.¹⁸²

Niven was judicious in recognising the importance of this shift of emphasis. The organisation of medical services around prevention or cure became a central issue during the period leading up to the National Insurance Act of 1911. One of the last acts of A.J. Balfour's government before the Liberals took office

in 1905, was to set up a Royal Commission to investigate the hopelessly out of date and disjointed structure of the Poor Law.¹⁸³ The commission had nineteen members. The chairman was former Conservative minister, Lord George Hamilton. The composition of the membership included actual administrators of the poor law being either Guardians or officials of the L.G.B.; the interests of the Charity Organisation Society, six commissioners being prominent members or supporters of it; representatives of the Church; the Labour movement was represented by George Lansbury, the rebel Guardian of the Poplar Union, and the I.L.P. member Francis Chandler, secretary of the Carpenter's Union; two social investigators, Charles Booth (who retired before the commission published its report due to ill-health) and Beatrice Webb were also included.¹⁸⁴ From the outset there was a division of opinion amongst the commissioners as to what their purpose, aims and methods should be. The dominant majority view was expressed to Beatrice Webb at the beginning of their deliberations by James Davy, the chief inspector of the poor law division of the L.G.B.

I extracted from Davy (Beatrice Webb wrote in her diary), in a little interview I had with him, the intention of the Local Government Board officials as to the purpose and procedure they intended to be followed by the Commission. They were going to use us to get certain radical reforms of structure: the Boards of Guardians were to be swept away, judicial officers appointed, and possibly the institutions transferred to the county authorities. With all of which I am inclined to agree. But we were also to recommend reversion to the 'principles of 1834' as regards policy, to stem the tide of philanthropic impulse that was sweeping away the old embankment of deterrent tests to the receipt of relief.¹⁸⁵

Davy's aim was to retain the principle of making the condition of those in receipt of poor relief "less eligible" than that of the lowest paid independent labourer. In order to achieve this, on receipt of relief, the individual would continue to be 'pauperised' through detention in the workhouse and disfranchisement.¹⁸⁶

There was a minority of opinion amongst the commissioners however, led by Beatrice Webb, that the principle of deterrence should be effectively substituted by,

the Principle of Prevention - prevention that is, not merely of pauperism, but of the very occurrence of destitution.¹⁸⁷

Her aim therefore was to demonstrate to her fellow commissioners the social and economic causes of destitution, including sickness and disease. The view which she attempted to convince her colleagues of, by bullying them into promoting numerous special investigations providing evidence against the efficiency of poor law administration, was that poverty like sickness could be eliminated through prevention.

In listening to the evidence brought by the C.O.S. members in favour of restricting medical relief to the technically destitute, it suddenly flashed across my mind that what we had to do was to adopt exactly contrary attitude, and make medical inspection and medical treatment compulsory on all sick persons - to treat illness, in fact, as a Public Nuisance to be suppressed in the interests of the community. At once I began to cross-examine on this assumption, bringing out the existing conflict between the Poor Law and Public Health authorities and making the unfortunate Poor Law witnesses say that they were in favour of the Public Health attitude! Of course Sidney supplied me with some instances, and I hurried off to consult M.O.H.s - Dr. X.... Dr. Y. As luck would have it Dr. Z had to give evidence.¹⁸⁸

Amongst Drs. 'X' and 'Y' etc. which she brought before commission were Arthur Newsholme who closely shared her view and Dr. J.C. McVail who completed a special report for them.¹⁸⁹

The "public health attitude" which she managed to manipulate the poor law witnesses to agree to was expressed fully by Mrs Webb before the Society of Medical Officers of Health at their meeting on November 9th 1906. "What is" she asked, "to be the relation of the Poor Law Medical Service to the Public Health Authorities".¹⁹⁰ She described how overlapping jurisdiction of the two rate-paid medical services was both inefficient and confusing. The example of hospital isolation was glaring. In London because there was poor law provision, affluent patients were paid for out of the public fund. In the provinces, because there was no provision for pauper patients the sanitary authorities had refused accommodation to them even when payment had been offered by the Guardians. The case of pulmonary tuberculosis, Mrs Webb suggested, illustrated most profoundly the way in which the treatment of disease was actually a function of prevention. Poor law tests of destitution meant that pauper patients were prevented from being treated in isolation hospitals and non-pauper patients from being taken into sanatoria. Such obstacles were undermining the principle of poor law administration in the treatment of disease. It was this experience which was compelling public health authorities to extend their functions every day.

It must in fact, seem ridiculous, in the campaign of preventing diseases, to take so much trouble to remove muck-heaps and prevent defective drainage, if we leave persons full of phthisical germs, breathing, coughing expectorating in the midst of densely packed populations, merely because they are living sources of disease, instead of dead. And what is true of phthisis, is true of measles, whooping cough, scabies, ophthalmia, ringworm, pediculosis and how many more? 191

Mrs Webb felt even more strongly that, by definition of his function, the practitioner of preventive medicine had superseded his curative colleague.¹⁹² The poor law medical officer, she pointed out, having ascertained the technical destitution of his patient, regarded his duty to be no more than to treat the disease in the individual. The M.O.H. on the other hand began by assuming that his duty was not only concerned with the particular disease of a particular patient. His function was to both remove the disease and prevent its recurrence either in the particular person or in any other. The question which arose therefore was whether two conflicting medical services, "working on diametrically opposite lines", should continue to co-exist. Mrs Webb was completely clear that the resolution to this conflict was "the public health attitude".

What seems wanted is concentration of responsibility and direction in the Medical Officer of Health, provided with a competent and duly differentiated staff of salaried assistants. Only through some such machinery can we hope to enforce in all districts the extensive prevention of, varied provision for, ill-health and disease.¹⁹³

These and many other views of Beatrice Webb on the abolition of the poor law along with its deterrence principles in relation to unemployment were rejected by the majority of the Royal Commissioners. The final outcome was the famous separate Majority and Minority Reports published in 1909, and the subsequent campaign of the Fabian Society to gain support for new legislation. Mrs Webb's Minority Report was signed by . Lansbury, Chandler, the Rev. Wakefield and herself but the campaign which was founded as the National Committee for the Prevention of Destitution gained broadly based support from, Liberal, Lib/Imperialist, Unionist, New Liberal and Labour M.P.s and some Conservatives.¹⁹⁴ Its propaganda medium was a monthly newspaper, The Crusade, whose editor, Clifford Sharp, became the first editor of the New Statesman. Rank and file members of the N.C.P.D. also organised study groups, small meetings, published pamphlets etc. one of the most active being C.M. Lloyd later to be the head of the Social Science Department at the London School of Economics.¹⁹⁵

Eventually a Bill was drafted to give effect to the Minority Report and introduced before the House during 1910. It became apparent however during the parliamentary debate that the issue was not between the Majority and Minority Reports but that even the proposals of the former were too radical for those who supported the perpetuation of things as they were. Asquith came out clearly in favour of the Guardians.¹⁹⁶ John Burns, ex-member of the Social Democratic Federation

one time Marxist turned political pragmatist and now Asquith's choice for president of the L.G.B, dismissed the need for the Prevention of Destitution Bill.¹⁹⁷ He claimed that better administration of the poor law could be achieved through internal reforms of the regulations. Balfour, who had indicated to the Webbs that he had an open mind, failed to take any decisive policy.¹⁹⁸ The bill was dropped through lack of effective support.

The S.M.O.H. had openly supported Mrs Webb in the pages of their journal, Public Health. On the occasion of her first address to them in 1906, there had been a mixed response to her radicalism.¹⁹⁹ By the time the Reports were published in 1909 however the May editorial of Public Health stated clearly that the proposals of the Majority Report would not be either workable or sufficient. The only comprehensive analysis of the question, it claimed, had been given in the Minority Report. The recommendations of the latter, the editorial pointed out, were already in line with "existing tendencies in local administration"; i.e. what M.O.H.s were already trying to achieve in their own districts. The great failure of the Majority Report was that:

It would appear that the Commissioners who have signed the Majority Report are without adequate appreciation of the achievements of public health administration in this country, and it is regrettable that more weight was not attached to the opinions of the fifty-one medical officers of health who gave evidence to the Commission. The view put forward by most of these witnesses is that the remedy for what the Majority Report rightly terms "the existing chaos in the organisation of medical assistance to the poor" is to be found in a development and extension of the work now carried out by the public health authorities.²⁰⁰

The collective view of the fifty-one M.O.H. witnesses was summarised in J.C. McVail's appendix report completed for the Commission. Examples of the contradictions within the existing system were that,

Phthisis cases are maintained in crowded, unventilated houses, where there is unrestrained facility to convey the disease to their offspring. Diabetes cases live on the rates and eat what they like.²⁰¹

It was only by regarding this work from the point of prevention and thereby transferring the medical functions of the poor law authority to a re-organised public health service, McVail suggested, that the unremitting chaos could be solved.²⁰²

With this kind of open support for the Minority Report's proposals the Society became increasingly involved in the promotion of the Prevention of Destitution Bill. Before the Act had been introduced into the House in 1910, Beatrice Webb again addressed a meeting of the Society. She spelt out the "far-reaching but on the whole simple scheme of reform" which she believed at that time would soon become law. This simple scheme would she assured,

merge both services in a unified medical organisation for each county and county borough; and to place this unified service under the supervision, not of the Poor Law Division of the Local Government Board, but of a newly constituted Public Health Department.²⁰³

Hopes for fundamental reform which the Society equally desired as much as Mrs Webb, were eliminated by the end of the year and already by the summer months of 1911 the Society had turned its attentions toward the imminent legislation which threatened to "dish" both

the Fabian campaign for and their own interests in the "Preventive Framework".²⁰⁴

In the 1909 budget, Lloyd George had already pointed toward further social reforms in the pipeline, a scheme to deal with the sick, invalided, widows, orphans and unemployment.²⁰⁵ Two small steps in this direction had been the Unemployed Workmans' Act 1906, and the Old Age Pensions Act 1908. During 1911 a dual system of unemployment and health insurance was instituted through the National Insurance Act, inspired by the German State contributory system observed by Lloyd George during the summer of 1908.²⁰⁶ The details of the unemployment scheme were worked out by William Beveridge and Hugh Llewelyn Smith at the request of Winston Churchill. It was a system of compulsory contributions in limited trades in which unemployment was cyclical rather than chronic. It was incorporated in Part II of the bill and passed through the Commons fairly easily.²⁰⁷ The most difficult and complicated issue was invalidity and sickness insurance in Part I of the bill which proved to be far more controversial and received a great deal more opposition. His first lobby of opposition were the friendly societies which already catered for the skilled working class who joined their provident health insurance schemes and obtained the medical services of doctors contracted to the societies plus payment of benefit for the duration of their invalidity.²⁰⁸ Lloyd George's scheme avoided confrontation with them through the reservation of state insurance for

only those who could not be better provided for by the societies and thus prevented any competition. This did not deal however with the large and influential industrial insurance companies, such as the Prudential, which provided funeral benefit, at minimum premiums, for those who were unable or did not choose to join the schemes of the Friendly Societies. Even though Lloyd George excluded funeral benefit from his scheme their "Combine" still objected to the widows and orphans benefit which they felt would also jeopardise their funeral benefit. However by giving both the friendly societies and the combine of the industrial insurance companies an approved status under the Act and dropping widows' and orphans' pensions altogether he managed to secure their co-operation.²⁰⁹ The bill was introduced during April 1911 and made contributions of 4d a week compulsory for all workers with incomes of less than £160 per year, with an additional 3d a week from their employer and 2d per week for the State. Thus it added up to Lloyd George's famous sum of "ninepence for fourpence".²¹⁰

However these manoeuvres only got the bill past a successful first reading and by the end of May far more intractable opposition was being mobilized by the B.M.A. . The medical profession already disliked contract practice. The friendly society employing a doctor intended to keep him on a close rein by allocating him patients rather than allowing him to choose them or they him. He was paid a capitation fee for each patient and in this way they could insure against

medical certificates, which determined the right to benefit, from being issued unless absolutely necessary.²¹¹ Even though contract practice was despised by the B.M.A. for its principle of interference in the normal relationship of private practice, oversubscription to the profession encouraged keen competition for it, especially among young doctors.²¹² Since the State insurance scheme was proposed to be administered by the friendly societies which became approved under the Act, the medical profession rightly envisaged a wide ranging extension of the contract which they hated.²¹³ Also the proposed capitation fee was only 4s a year for each patient which, even though this excluded the cost of medicines, was too low.

The B.M.A. called a conference to decide upon the action they would take on the 1st June.²¹⁴ That month the S.M.O.H. published their first response to the bill. They called the extension of club practice too high a price to pay for the scheme. Their support for the B.M.A. however was matched by their disappointment in the preventive aspirations in the bill.²¹⁵ Although the benefit was to be mainly distributed through the approved societies, Local Health Committees were also to be set up to administer funds for the maintenance and expenditure incurred by the local authorities' sanatoria. They were to be non-statutory and made up instead of appointed representatives of the approved insurance societies and the local authorities.²¹⁶ They were also to become responsible for the popularisation

of hygienic knowledge through local lectures etc. This was far from satisfactory. Not only was there to be no transfer of responsibility for medical provision to a restructured public health authority, but some of the existing areas of control over the prevention of phthisis were removed from the M.O.H.²¹⁷

By the end of July 1911, the Society had written directly to the Chancellor expressing their opposition to the creation of the new local health committees. Their protest was supported by the Association of Municipal Corporations and the County Councils' Association.²¹⁸ They informed the Chancellor that he would have fulfilled his purpose to provide a national system of preventive as well as curative health care "if, instead of creating a new health authority, it (the bill) made fullest use of existing preventive agencies."²¹⁹ They demanded, however, that if the committees were to be instituted they should be statutory bodies, containing representatives of the interests directly involved; i.e. members of the existing public health committees.²²⁰

In the meantime the B.M.A. had been demanding that the local health committees also become responsible for administering the medical benefit instead of the friendly societies maintaining control of it. Lloyd George consented to this and the system of contract practice was replaced by a panel of doctors drawn up by the local committees from which patients could make their own choice of physician. The constitution of the

committees was also amended to make them part of the county administrations.²²¹

Once the bill was passed it still received opposition from the B.M.A. before it was implemented. They continued to feel that the remuneration fees had not been dealt with adequately.²²² The N.C.P.D. had sustained an attack on the principle of compulsory contributions from low wage earners from the outset claiming that it adhered to the principle of the Majority Report of 1909, making the poor still "stand by their own accidents."²²³ The insurance scheme undermined entirely the Webbs' proposals for the provision of a preventive framework financed out of general taxation. After the enactment of the bill the N.C.P.D. disintegrated and the last issue of the Crusade was published in March 1912.²²⁴ The Fabian Society continued a minute examination of the Act however and an analysis of it appeared in two supplements of the New Statesman in 1914 and 1915.²²⁵

The S.M.O.H. remained equally disenchanted with the Chancellor and his National Insurance Bill. Basically it was his failure to understand the fundamental nature of preventive medicine which distressed them. Throughout the passage of the bill, and subsequent to its enactment, Lloyd George placed great stress on the fact that the insurance scheme was a preventive measure against sickness. In a speech at Holborn on 20th October 1911 he illustrated the way in which it would achieve this. Firstly, doctors working under the scheme

would, he claimed, report the insanitary conditions of the homes they visited to the local health committees, who could then inform the sanitary authorities. Secondly, he believed, the penal provisions of the bill could then be enacted against slum property owners.²²⁶ The editorials of Public Health reflected upon the irony of the Chancellor's vision.

"From this passage (of the Holborn speech) it is clear that Lloyd George intends that the doctors shall become sanitary inspectors. This we imagine will be news to the medical profession." ²²⁷

Especially, it was asserted, as the general practitioner was totally unqualified to determine the level of insanitary conditions in dwellings. The M.O.H.s did after all have armies of qualified sanitary inspectors on the staff of their departments, whose level of training had been increasingly specialised by institutions such as the Sanitary Institute over the last two decades.

It was even more clear that Lloyd George's belief that disease would be eliminated simply by a programme of slum demolition was incredulously out of date. Had this been true then the M.O.H.s of the 1870s would have made his sickness insurance unnecessary before 1900. It was this misconception of the whole complexity of preventive medicine which led the Society to conclude that,

What is wanted is the development and expansion, on broad statesmanlike lines, of existing preventive agencies, which have stood to the test of time and have already achieved great results in the reduction of mortality and sickness. We can see no signs of such development in the National Insurance Bill. ²²⁸

The Registration of Midwives and the Health of the School Child.

When in 1910 Beatrice Webb described the "streams of facts" which had led the Minority Report to conclude that a new public health authority must be created, she listed the developments which had already taken place which reduced the responsibility of the poor law and had increased that of the M.O.H in the provision of health care.²²⁹ Apart from those which had brought the treatment of disease into the sphere of prevention such as the hospitalisation of cases of infectious disease, she also listed the new responsibilities regarding the supervision of midwives and health of the school child which had recently been added to the work of the M.O.H. . The reception of these responsibilities by M.O.H.s provides further insight into the professional horizons which they were developing.

The history of midwifery and the controversial development of legislation to register midwives was complex.²³⁰ The factional struggle during the 1890s for control over the system of registration to be instituted was intricate and closely fought.²³¹ The S.M.O.H. took no overt platform in these disputes, but after 1899 it adopted an individual position on the issue. M.O.H.s had always sympathised with the pro-registrationists but did not identify themselves with any single faction within this pressure group.

The Council of the Society set up a sub-committee to monitor the issue in February 1895.²³² The Promoters of the Bill, produced a draft that year which the S.M.O.H. chose to make little comment upon other than to note that the supervision of midwives should be properly remunerated.²³³ They made no retaliation, however, to the opinion expressed by the B.M.A. that the burden of supervision should not be placed upon M.O.H.s. The B.M.A. had in fact suggested that to make the M.O.H.s the supervising authorities would be both "extraordinary and inappropriate".²³⁴

By the end of the year the Parliamentary sub-committee of the Society began to examine the whole question of the training of midwives. This was not the first occasion that the Council had taken an interest in the technical training of unqualified nurses for health work. In 1893 the Council prepared an extensive report on the role and training of rural health missionaries.²³⁵ The author of the report, Alexander Wynter Blyth, proposed that an M.O.H. chosen from the County should undertake the technical training of suitable candidates from the community in "health at home". The training scheme should include examinations and the missionaries receive certificates of competence. The supervision and allocation of their work, it was suggested, should be the responsibility of the county M.O.H. . An experimental programme was instituted in Buckinghamshire by Dr. D'Ath, the county's M.O.H.. A copy of Blyth's report and the results of the Buckinghamshire scheme

were subsequently sent to every county authority in England and Wales. A comparable report on the training of midwives however was never produced by the Society's sub-committee and by the end of 189 it was already preoccupied with a new draft registration bill.

In January 1899 the - sixth midwives bill was introduced into Parliament.²³⁷ The Society's sub-committee produced a detailed analysis of the draft and presented it to the Council on April 14th.²³⁸ Until this date the Society had made no objections to the successive legislation introduced either by the Promoters or the B.M.A. . For the first time the sub-committee outlined the S.M.O.H. stance. They began with a review of the title of the bill, suggesting that it should be termed the "Midwifery-Nurses Bill" and that the term "Midwife" should be dropped. By implication therefore the sub-committee were in sympathy with those wishing to see the "midwife" replaced by nurses who had additional training in midwifery.²³⁹

A fundamental change which the sub-committee recommended was that the wording of clause 9 should be changed. Clause 9, section 1, had cited the county council as the local supervising authority of midwife practice. The change which the sub-committee proposed was that the term county council should be replaced by "sanitary authority", who was of course the county M.O.H. . The Society therefore should end its impartial silence, the sub-committee suggested, and

stake its claim in the registration question. At this stage in the progress of legislation the trend was clearly toward a local licensing system rather than a central registration of midwives. The sub-committee possibly felt that now the opportunity was right to secure the power of licensing for the public health office instead of its going to the local practitioner committees.²⁴⁰

Section 2 of clause 9 provided that the local supervising authority should investigate charges of malpractice amongst midwives. The committee recommended that this clause should be deleted and replaced by one which empowered the local supervising authority for malpractice to be subject to the approval of the sanitary authority.²⁴¹ This would put the power to supervise and sanction malpractice entirely in the hands of the M.O.H.. Further, the sub-committee recommended that the principle of licensing should be replaced by one of annual notification only.²⁴² The issue of adequate funding for the function of the supervising officer was restated by the sub-committee which emphasised the need for fixed scales of remuneration.

The remainder of the sub-committee's report dealt with the alternative bill which had been drafted by the B.M.A. . Their statement to the B.M.A. was clear. Throughout the B.M.A. draft, the sub-committee recommended that,

It is desirable that the sanitary authority should be constituted as the local supervising authority, instead of a committee of registered medical practitioners as provided by section 10 of the Bill.²⁴³

The Society were to end their silence in relation to the B.M.A. . A clear challenge for control of midwifery practice was presented in these proposals. The sub-committee's aim was to expand the jurisdiction of the public health office and obtain increased funding in the process. In their report on the B.M.A. bill the sub-committee maintained their objection to central control of sanctions for malpractice and their wish to substitute notification for licensing. An additional amendment to the B.M.A. draft was in relation to lying-in hospitals. Clause 18 of the Association's bill stated that inspection of sanitary arrangements of lying-in hospitals should be conducted by registered practitioners. The Society was to object strongly to this clause, stating that all sanitary arrangements be inspected to the satisfaction of the sanitary authority.²⁴⁴ The report of the sub-committee was sent to the Promoters and to the B.M.A. .

From 1900 onward the success of the Promoters in achieving an Act of Parliament, which was close to the needs and wishes of the Midwives' Institute, resulted in a bill which was passed in July 1902.²⁴⁵ This Act made the Central Midwives Board independent of the G.M.C. . It provided for annual notification and dropped the licensing principle. The local supervising authority was designated as the county M.O.H. but the power to sanction and suspend a midwife for malpractice remained with the central board. The outcome was to some extent satisfactory for the Midwives Institute and the S.M.O.H..

The relentless opposition of the medical profession to registration, through the actions of the B.M.A. , resulted in their losing statutory control over the practice of midwives to a great extent. The position which the S.M.O.H. took up in 1899 anticipated the actual legislation closely. Although these measures favoured those of the Promoters rather than the B.M.A. the interests of the Society were not the emancipation of women or a particularly fair registration system. Rather they were pursuing their own interests against the B.M.A. and the general practitioner committees in the sanitary districts. The registration of midwives offered another avenue which the preventive profession could use to gain increased influence over the provision of health care.

There was a genuine concern within the Society, however, to gain a reduction of maternal mortality through the registration of midwives. The most useful powers in the Act, in this respect, were those of compulsory disinfection. The key to the control of puerperal fever was, the Society believed, the capacity of the M.O.H. to suspend a midwife from practice, not for misdemeanour, but after she had attended a case of puerperal fever until her clothes and instruments were sufficiently disinfected.

The Society did not participate in the witch-hunt on unqualified practice that the B.M.A. had sought when they obtained a clause in the 1902 Act which would make all "uncertificated" practice illegal after 1905.²⁴⁶ The county M.O.H.s opted instead to encourage women already

practising in their districts to become properly qualified, and registered as a "certificated" midwife.²⁴⁷ The reasons for this were entirely practical, as James Niven pointed out, .

In Manchester the course pursued was to endeavour as far as possible, to discover all persons practising as midwives and to aid them in placing their applications before the Board. I do not think the result would have been much different had we instituted an enquiry into the fitness of the midwives to be registered. I believe the course pursued in Manchester was the proper one.²⁴⁸

The reason for taking this action rather than a "Pride's Purge" required by the B.M.A. was that,

judging from the cases which have come to our knowledge it cannot be said that the bona-fide (certified but not certificated) midwife has proved herself more harmful or less than the midwife who had received a hospital certificate.²⁴⁹

A practical necessity, Niven believed, was that

there should not be too vehement action in excluding women from the register lies in the difficulty of replacing them. Even yet, the machinery for providing the carefully-trained midwives desired by the Act has scarcely begun to produce them.²⁵⁰

Niven's statement was a testimony to the fact that the fears expressed by the Home Office in their concern to exclude any clause in the 1902 Act which would abolish unqualified practice, were well justified.²⁵¹ It also revealed the short-sightedness of the B.M.A. of putting "Prides Purge" before the practical necessities of the working of the Act.

The control of midwifery practice was only one feature of the control of infant life and maternal mortality. Infant life protection was later pursued by

the Society through an Act which would enforce registration of birth within thirty-six hours.²⁵² Further still an effort was made by the Society to extend their responsibilities in relation to the health of the school child. A committee to consider the interests of the Society in the promotion of school inspection was set up in the Society in January 1899.²⁵³ But it was not until 1906 that the whole question of school inspection moved onto the Government's agenda, when the Inter-departmental Committee on Medical Inspection and Feeding of School Children Attending the Public Elementary Schools, was instituted. The first legislation which resulted was the Education (Provision of Meals) Act of 1906. Support for inspection continued in the medical press throughout 1906 and the following year compulsory school medical inspection was established under the Education (Administrative Provisions) Act 1907.²⁵⁴

This Act created a medical department at the Board of Education to which George Newman, (M.O.H. Finsbury) was appointed as the first chief medical officer.²⁵⁵ The S.M.O.H. looked upon the new legislation and especially the appointment of Newman as a significant move toward the establishment of a unified national health service based on public health administration. Apart from Newman's appointment being, "particularly gratifying to the public health branch of the profession", the Society noted that,

Nothing could be more statesmanlike than this realization of the conception that school hygiene is a department of general hygiene and that in organising the additional work existing organisations must be utilized to the fullest extent of their capacity in order that the interests of efficiency as well as of economy may be conserved. 256

The B.M.J. reflected far more scepticism, and suggested that the Education Board had been forced into inspection and would not institute an efficient system.²⁵⁷ A memorandum however was issued on November 22nd 1907, signed by the Secretary Sir Robert Morant, which informed the local education authorities that they should be prepared to formulate schemes for ameliorating the ill health of school children that was revealed by inspection. In doing so they should "use to the utmost extent the existing machinery of medical and sanitary administration, developing and supplementing it as required, rather than supplanting it."²⁵⁸ Arthur Newsholme wrote an editorial in Public Health in December which claimed that "The Children's Charter of Health" was a landmark in public health administration, "which foreshadows the immense advances in unification and associated completeness and efficiency which are about to be realised in that administration".²⁵⁹ It was a major step, he believed, toward "the establishment of a unified, central and national service of health."²⁶⁰

From the reports of the London Education Committee, completed by its medical officer, Robert Kerr, it was clear that what was required for the treatment of school children were special clinics.

The establishment of general medical inspection means, sooner or later the establishment of school clinics for treatment in quite restricted and defined ways.²⁶¹

Kerr had equally clear ideas about who should be responsible for this dual system of inspection and clinic provision. Firstly, "a general practitioner should

be rigidly excluded. The two things are quite incompatible."²⁶² He felt that the work would require only a part-time official but would most effectively be combined with the duties of the M.O.H. . The posts should be taken up, in his view, by young but well qualified and experienced full-time M.O.H.s from the large urban authorities.²⁶³ While plans for comprehensive inspection and treatment of school children were still pending, Kerr and the S.M.O.H. believed that this was clearly an important branch of preventive medicine to be incorporated into a "larger more comprehensive system of public health service".²⁶⁴ After the passing of the National Insurance Act in 1911, the comprehensive service seemed an illusion, but school inspection continued to be carried out by M.O.H.s.

NOTES

- 1: R.M. Macleod, "Changing Perspectives in the Social History of Science." in I. Spiegel-Roesing and D. Solla-Price (eds), Science, Technology and Society: A Cross-Disciplinary Perspective. (London, Sage, 1977), pp.177-180.
- 2: M. Berman, Social Change and Scientific Organisation: The Royal Institution 1799-1824 (London, Heinemann. Educational Books, 1978), pp.1-22
- 3: See for example, K.Macleod, Politics, Professionalisation and the Organisation of Scientists 1917-1942 (University of Sussex, D.Phil Thesis, 1975)
- 4: Association of Metropolitan Medical Officers of Health, Minutes of First General Meeting, 23rd April, 1856.
- 5: A.M.M.O.H. , Minutes, 13th May 1856
- 6: Ibid.
- 7: Ibid.
- 8: Ibid., (Note at the bottom of the page of minutes of the meeting, marked with an asterisk.)
- 9: Ibid.
- 10: Ibid.
- 11: Ibid.
- 12: Reginald Dudfield, "History of the Society of Medical Officers of Health." in F.J. Allan (ed), Jubilee Number of Public Health 1906 (London, 1906), pp.1-8.

- 13: Public Health, Vol. I, May 1888, No.1, "Preface".
- 14: Dudfield, op.cit., p.3
- 15: Ibid.
- 16: Ibid.
- 17: Public Health, Vol. 86, 1972, "The Society of Medical Officers of Health, Past, Present, and Future." , pp. 27-35
- 18: Ibid.
- 19: County Medical Officers Association, Minutes, 1902- 1907.
- 20: Dudfield, op.cit., pp. 168-174; see also, H.P.Tait, "Notes on the Scottish Branch of the Society of Medical Officers of Health." in Public Health, Vol. 90, 1976, pp. 265-267.
- 21: Society of Medical Officers of Health, Minutes of Council, 1903, November 13th.
- 22: Public Health, Vol. 86, pp. 27-35.
- 23: Robert Dundas-Thompson, "Reading of the By-Laws of the Association." A.M.M.O.H., Minutes, June 11th, 1856.
- 24: A.M.M.O.H., Minutes, January 14th, 1864.
- 25: S.M.O.H., Minutes of Council, January-December, 1895.
- 26: Public Health, Vol. 86, pp. 35-41

27: Dudfield, op.cit., pp.8-10

28: Ibid.

29: Public Health, Vol. 86, pp. 35-41

30: Dundas-Thompson, loc. cit.

31: A.M.M.O.H., Minutes, 1860, January 17th.

- 32: Calculated from Card Index of all officers who served in management of the Society, 1856-1906. Source for compilation of index: Society of Medical Officers of Health, Annual Reports, 1861-1879, Minutes of Annual General Meetings, 1889-1906; and Dudfield op.cit.
- 33: Ibid.
- 34: Sources for Table I: Medical Directory for England and Wales, 1856-1906; "Obituaries", from The Lancet, 1862-1946; "Obituaries" from the British Medical Journal, 1870-1946; "Obituaries" from The Medical Gazette, 1870-1900; "Obituaries" from Public Health, 1889-1946.
- 35: Sources for Table II as for Table I.
- 36: Card Index for Office Holders, 1856-1906.
- 37: For discussion of career histories of Metropolitan Officers, see Chapter I.
- 38: Card Index for Office Holders.
- 39: "William Thomas Garrett Woodforde.", B.M.J. 1903, Vol. I, pp. 1272-1273
- 40: "Henry Armstrong", Public Health, Vol 41, 1927-1928, p.38.
- 41: Alfred Hill (1826-1922), Lancet, 1922, Vol. I, p.556; Alfred Bostock Hill (1854-1932), Lancet, 1932, Vol. II, p.1088; Thomas Eustace Hill, (1866-1932), Public Health, Vol. 45, 1931-32, pp.67-68.

- 42: Alfred Hill, "Presidential Address", in Public Health, Vol. I, 1888, p.3
- 43: Ibid.,p.5
- 44: Sources for Table III, as for Tables I and II.
- 45: Sources for Table IV,as for I,II, and III.
- 46: Ibid.
- 47: Card Index for Office Holders, 1856-1906
- 48: Ibid.
- 49: John C. Thresh, (1850-1932), Lancet, 1932, Vol. I, pp.1177-1198; J.C. McVail, (1849-1926), Lancet, 1936, Vol. II, pp.306-307; James Mitchell Wilson, (1844-1927), Public Health, Vol. 40, 1926-1927,pp.376-377.
- 50: Herbert Manley, (died 1912), Public Health , Vol. 26, 1912-1913, p. 265; for history of professional career of Arthur Newsholme (1857-1943) see; A. Newsholme, Fifty Years in Public Health: A Personal Narrative With Comments. The Years Preceding 1909. (London, Allen and Unwin, 1935) and A. Newsholme, The Last Thirty Years in Public Health, Recollections and Reflections on My Official and Post Official Life. (London, Allen and Unwin, 1936); and see also, D.N.B. , Vol. 1941-1950,pp.625-626.
- 51: Ibid., Manley, in Public Health, Vol. 26,p.265
- 52: James Mitchell Wilson, in Public Health Vol. 40, op.cit. p. 376.
- 53: Francis Vacher, (died,1913), Public Health, Vol. 27, 1913-1914, p.217.
- 54: See Newsholme, op.cit.; George Newman (1870-1948), D.N.B., Vol. 1941-1950, pp.624-625; Edward Seaton, (1847-1915), Lancet,1915, Vol. I, pp.516-517; Henry Kenwood (1862-1945), Lancet, 1945, Vol.I, p.804; Benjamin Arthur Whitelegge, (1852-1933), B.M.J. ,1933, Vol.II, pp.806-807 and pp.897-898. Whitelegge became the Chief

- 54: Inspector of Factories, at the Home Office, 1896-1917. He and George Newman wrote a standard manual on hygiene which went into thirteen editions.
- 55: Alfred Bostock Hill, "Tribute to His Former Colleagues, G.H. Fosbroke and G.H. Reid." in Public Health, Vol. 39, 1925-1926, p.63.
- 56: Ibid.
- 57: Herbert Manley, "The Society of Medical Officers of Health: Its Aims, Objects and Policy." in Public Health, Vol. 10, 1897-1898, pp.138-142.
- 58: Ibid., p.140
- 59: Ibid., p.139
- 60: Ibid., p.139
- 61: S.M.O.H. Minutes of the Finance and Publications Committee, 1892- 1902; Minutes of Finance and Journal Committees, 1902-1905; Minutes of Finance Committee, 1908-1914.
- 62: S.M.O.H. Minutes of Publications Committee, 1892, May - October.
- 63: S.M.O.H. Minutes of Journal Committee, 1897, January 15th, and Minutes of Editorial Committee, April 7th 1897.
- 64: The editorial style of Alexander Wynter-Blyth for example was far more conservative than that of Arthur Newsholme. The latter was less provocative however than George F. Mcleary who openly denounced any responsibility for articles which he did not like, e.g. at the bottom of an article published in the journal in October 1907, Vol. 20, pp.35-45, Mcleary wrote, "The editor is not responsible for the opinions

- 64: expressed in any signed article." Mcleary was associated with the Fabian Society and published three Fabian Tracts, Nos. 90, 94, and 95, in 1900. The chronology of the editors of Public Health up to 1911 were: A.W. Blyth, 1888-1892; Arthur Newsholme, 1892-1896; Reginald Dudfield, 1896-1901; Frederick James Allan, 1901-1906; G.F. Mcleary, 1906-1911.
- 65: S.M.O.H. Minutes of Special Committee on the Incorporation of the Society, 1892, Febuary 18th.
- 66: S.M.O.H. Minutes of the Incorporation Committee, April 8th, 1892.
- 67: S.M.O.H. Minutes of the Parliamentary Committee, 1892-1900.
- 68: See, "Report to the Council on the Summary of Replys (with questions) of Questionnaire Issued by the Council Relating to the Amendment of the Infectious Disease (Notification) Act." in Minutes of Council, November 1898.
- 69: S.M.O.H. Minutes of Parliamentary Committee, 1897-1911.
- 70: S.M.O.H. Minutes of Council, 19th Febuary, 1894.
- 71: S.M.O.H. Minutes of Committee on the Conjoint Board of Examiners, 1894-1897
- 72: Thomas Orme Dudfield, "Memorandum on the Tenure of Office by Medical Officers of Health." in Public Health, Vol. 8, 1895-1896, pp.88-89.
- 73: "General Order of the Poor Law Board, May 1857." quoted by Dudfield, p. 88.
- 74: Ibid. Dudfield, p.89.
- 75: A.Wynter-Blyth, "The Local Government Bill for England

- 75: and Wales" in Public Health, Vol. I pp.10-11.
- 76: Ibid..
- 77: S.M.O.H. , Minutes of Ordinary Meeting of the Society, 1888, April 20th, reprinted also in Public Health, Vol. I, pp.11-15
- 78: Ibid., p.11
- 79: Ibid., p.12
- 80: Ibid., p.14.
- 81: Dr. Hime was to suffer the very circumstances which he wished to reform. A special meeting of the North-Western Branch was called on June 28th, 1888, deploring the refusal of Bradford Corporation to re-appoint Dr. Hime when the annual renewal of his contract should have been made. See, Minutes of the meeting, reprinted in Public Health, Vol. 1, p.104.
- 82: S.M.O.H. , "Annual Report of the Honorary Secretaries" from Minutes of Annual General Meeting, October, 1888, reprinted in Public Health, Vol. 2, 1888-1889, pp. 193-196 .
- 83: Francis Bond, "The Local Government Act in Its Sanitary Aspects." read before the Ordinary Meeting of the Society, November 16th, 1888, reprinted together with Minutes of the meeting and discussion of the paper in Public Health , Vol. 1, 1888-1889, pp.236-245.
- 84: Public Health (London) Law Amendment Bill, [54 Vict], P.P. 1890- 91, Vol. VIII, Clause 35, section 8, pp. 87-88
- 85: Ibid., p.88
- 86: For a sample list of unfair dismissals within a ten-year period, see H.Page, "Injustices to Medical Officers

- 86: of Health Under Our Existing Sanitary Organisation." in Public Health, Vol. 2, 1889- 1890, pp.12-18; Dr. Page drew up a "List of Displaced Medical Officers with Nominal and Actual Causes" for the period 1876-1888; p. 16. There were eighteen cases listed by Dr. Page as being unfair dismissals with only spurious reasons being provided by the authority. The authorities used a number of different tactics for ridding themselves of an unwanted officer from reducing his salary to actually taking legal action to prevent a qualified M.O.H. from practising in the district.
- 87: S.M.O.H. Minutes of Council, January 1895; see also first report of Carrioll's case in Public Health, Vol. VI, 1893-1894, pp.399-400.
- 88: Ibid.
- 89: The Lancet, 1896, Vol. I, p.571.
- 90: S.M.O.H. , Minutes of Council, March 19th, 1896.
- 91: The B.M.J. , Vol. I, p.950.
- 92: An excellent survey of M.O.H. salaries showing the range from nominal to full-time appointments by T.W.H. Garstang was completed in 1899. His article also highlighted the way in which salaries, unfair dismissal and the whole issue of security of tenure were inextricably bound together. See, T.W.H. Garstang, "Security of Tenure for Medical Officers of Health", in Public Health, Vol. XII, 1899-1900, pp.63-79. Garstang based his calculations on the salaries listed in the Medical Directory for England and Wales (excluding Metropolitan districts) and drew up a table which stated that in 1899 there were :

92:

Salary of Medical Officer of Health.				England.	Wales.	Total.
Below £20...	...	...	...	70	14	84.
£20, but not exceeding £30	...	...	...	463	81	544
Over £30, " £50	...	...	...	880	42	922
" £50, " £100	...	...	...	883	22	905.
" £100, " £250	...	...	...	117	8	125
" £250, " £500	...	...	...	55	4	59
" Exceeding £500	...	...	...	86	8	94
				1,454	174	1,628

or calculated by percentages:

				Below £20, 5 per cent.	
£20, but not exceeding £30,	...	...	...	88½	"
Over £30, " £50	...	...	...	23	"
" £50, " £100	...	...	...	25	"
" £100, " £250	...	...	...	7½	"
" £250, " £500	...	...	...	8½	"
" Exceeding £500,	...	...	...	2½	"

He also listed the 85 Sanitary authorities in England and Wales which were paying only nominal salaries to their officers of under £25 per annum during 1899, which included Farnborough, see, "Appendix", pp.76-77.

93: Editorial, "The London School Board Wants a Medical Advisor of Special Ability and Offers the Salary of a Clerk." in Public Health, Vol. 2, 1889-1890, p.335

94: "Medical Officer London School Board" Public Health, Vol. 2, 1889-1890, p. 335

94: "Medical Officer London School Board", Public Health, Vol. 2, 1889-1890, p.371.

95: Editorial, "The Salaries of Medical Officers of Health". Public Health, Vol. 5, 1892- 1893, p.206.

96: "The Money Value of a Medical Officer of Health." in Public Health, Vol. 5, 1892-1893, p.310

97: Thomas Eustace Hill, "Insecurity of Tenure of Officers of Health." abstract from Annual Report for County Durham 1891, reprinted in Public Health, Vol. 5, 1892-1893, p.343.

98: H.Page, op.cit., pp.13-18

99: Dr. A.B. Hill, "Discussion on Dr. Page's Paper." Public Health, Vol. 5, 1892-1893, p.18.

- 101: S.M.O.H. Minutes of Ordinary Meeting of the Incorporated Society, 1893, December 18th, also reprinted in Public Health, Vol. 6, 1893-1894, p.99.
- 102: Henry May, "The Status, Remuneration and Tenure of Office of Medical Officers of Health." in Public Health, Vol. 6, 1893-1894, pp.51-52.
- 103: Ibid.
- 104: Ibid.
- 105: Frederick Adams, "The Status, Remuneration and Tenure of Office of Medical Officers of Health." in Public Health, Vol. 6, 1893-1894, p.2.
- 106: Ibid.
- 107: J.C.Thresh, "Discussion", Public Health, Vol. 6, 1893-1894, p.3.
- 108: Edward Seaton, "Should Medical Officers of Health Engage in Private Practice." abstract from the Annual Report of 1892 for the County of Surrey, reprinted in Public Health, Vol. 6, 1893-1894, pp.5-6.
- 109: Arthur Ransome, "The Training and Qualification of Medical Officers of Health." read before the Society at the Ordinary Meeting of the Incorporated Society, 1893, December 18th, reprinted in Public Health, Vol. 6, 1893-1894, pp.242-245.
- 110: Ibid. pp. 245-247.
- 111: See Chapter II, pp. 131-145

- 112: H. Armstrong, "Discussion on Ransome's Paper."
in Public Health, Vol. 6, 1893-1894, p. 245.
- 113: S.M.O.H. Minutes of Council, December 17th, 1894.
- 114: Sir (Balthazar) Walter Foster, Lord Ilkeston,
(1840-1913). Professor of Anatomy at Sydenham
College, he was elected to the General Medical
Council in 1866 on which he served until 1896. He
became a Liberal M.P. in 1885 and in 1892, Gladstone
made him the Parliamentary Secretary to the Local
Government Board. He received his peerage in 1910.
See, Munks Role , Vol. IV, pp. 214-215.
- 115: S.M.O.H. Minutes of Council, March 21st 1895.
- 116: Ibid.
- 117: Ibid.
- 118: Ransome, Thresh, Seaton and Adams op.cit.
- 119: S.M.O.H. Minutes of Council, March 21st 1895.
- 120: Ibid.
- 121: Edward Seaton, "Letter to Reginald Dudfield,
Secretary of the Society," 19th November 1895,
published in the November edition of Public Health,
Vol. 8, pp. 163-164.
- 122: Ibid.
- 123: S.M.O.H. Minutes, Ordinary Meeting of the
Society, 16th January 1896. also reprinted in
Public Health, Vol. 8, 1895-1896, pp. 146-149.
- 124: S.M.O.H. Minutes of Council, 16th January 1896

- 125: Minutes of Ordinary Meeting, January 16th 1896,
op.cit.
- 126: Ibid.
- 127: Ibid.
- 128: Ibid.
- 129: Ibid.
- 130: S.M.O.H. Minutes of Ordinary Meeting of the
Society, Febuary 20th, also reprinted in Public
Health, Vol. 8, 1895-1896, pp. 178-179.
- 131: Ibid.
- 132: Ibid. p. 180
- 133: Ibid. p. 181
- 134: Ibid. p. 183
- 135: Ibid.
- 136: Ibid. p. 184
- 137: Ibid. p. 185
- 138: S.M.O.H. Minutes of Council, October 17th 1895.
- 139: S.M.O.H. Minutes of Council, January 16th 1896
- 140: Ibid.
- 141: S.M.O.H. Minutes of Council, Febuary 10th, 1899.
- 142: Ibid.
- 143: Editorial, "Superannuation", Public Health, Vol.
11. 1898-1899, pp.11-12.

- 144: Ibid.
- 145: Editorial, "Superannuation", Public Health, Vol. 11, 1898 - 1899, pp.757-758.
- 146: S.M.O.H. Minutes of Council, January 12th, 1900.
- 147: The Lancet, 1901, Vol. I, pp. 1115; The B.M.J. 1901, Vol. I, p.978 and pp. 1035-1036. The bill had been introduced and withdrawn the previous year by : Robert Farquharson, see The Lancet, 1900, Vol. I, p. 1333 and The B.M.J. 1900, Vol. I, p.1115. The Bill was supported by predominantly Liberal Unionist M.P.s and the medical lobby, such as Cripps, Foster and Farquharson. For life of Sir Michael Foster (1836-1907) see, D.N.B. (1901-1911) pp.44-46 and Gerald L. Geison, Sir Michael Foster and the Cambridge School of Physiology. The Scientific Enterprise in Late Victorian Society. (Princeton, N.Y. University Press, 1978). For Robert Farquharson (1836-1918) see Munks Role, Vol. IV, pp.245-246; also, R. Farquharson, In and Out of Parliament (London, Williams and Norgate, 1911) and The House of Commons from Within, (London, 1912). For Sir Charles Alfred Cripps (Baron Padmoor) (1852-1941) see, D.N.B. (1941-1950), pp.186-187.
- 148: "Security of Tenure for Medical Officers of Health", report of the deputation in Public Health, Vol. 19, 1906-1907, pp.233-239.

- 149: W.M. Frazer, A History of Public Health 1834-1939 (Bailliere, Tindall and Cox, London, 1950) p.124.
- 150: Sidney Chave, "The Medical Officer of Health 1847-1974" in Proceedings of the Royal Society of Medicine, Vol. 67, 1974, pp. 1243-1247. For further discussion see, H.Francis, "The Medical Officer of Health: Myth or History?" and R.C. Wolfenden, "From Medical Officer of Health to Community Physician (1847-1974) in Proceedings of the Royal Society of Medicine, Vol, 67, pp. 1251-1255.
- 151: Ibid. Chave. p.1245
- 152: Henry May, "The Isolation of Infectious Disease in Hospitals" read before the Birmingham and Midland Branch of the Society, January 2nd, 1890, reprinted in Public Health, Vol.2, 1889-1890, pp.297-301.
- 153: A.B. Hill, "Sanitary Jottings." Public Health, Vol. 1, 1888-1889, pp.25-27.
- 154: Public Health, Vol. 9, 1896-1897, p. 169.
- 155: Henry May, op.cit. p.299.
- 156: Arthur Whitlegge, "Notification of Infectious Diseases." read before the first Provincial Meeting of the Amalgamated Society held at Worcester, September 26th, 1888, reprinted in Public Health, Vol.1, 1888-1889, pp.167-170.

- 157: Gwen Ayres, State Hospitals and the Metropolitan Asylums Board 1867-1930. (London, Wellcome Trust, 1971), pp. 31-128.
- 158: S.M.O.H. Minutes of an Ordinary Meeting of the Society, April 11th 1890, also reprinted in Public Health, Vol. 3, 1890-1891, pp.2-9.
- 159: Ibid.
- 160: Ibid. p.7
- 161: Ibid.
- 162: Ibid. p.7-9.
- 163: Ibid.
- 164: Ibid.
- 165: Ibid.
- 166: Ayres, op.cit., pp.89-94
- 167: Minutes, April 11th, 1890, op.cit.p.9.
- 168: William Bulloch. The History of Bacteriology, (London, O.U.P. 1938), p.237.

- 169: A.T.Wallace, "Sir Robert Philip: A Pioneer in the Campaign against Tuberculosis". in Medical History 1961, Vol 5, pp. 56-64.
- 170: For history of Tuberculosis and campaign to prevent it see: Harley Williams, Requiem for a Great Killer. The Story of Tuberculosis. (London, Health Horizon, 1973), pp.33-54; S.A. Waksman, The Conquest of Tuberculosis (London, Robert Hale, 1965),pp.97-99; S. Lyle Cummins, Tuberculosis in History (London, Balliere, Tindall and Cox, 1949), passim.
- 171: Brand , op.cit., pp.172-177.
- 172: Deborah Dwork, The History of the Infant Welfare Movement in England, 1898-1918,(London, University College, Phd Thesis, 1984), pp.121-252.
- 173: James Niven, (1854-1925) M.O.H. Manchester, 1894-1922, was a pioneer in the field of milk hygiene. See, "On the Prevention of Tuberculosis" The Medical Chronicle, Vol. 6, October, 1896, pp.1-32; Observations on the History of Public Health Effort in Manchester, (Manchester, Heywood, 1923). He worked in collaboration with the director of the first public health laboratory, Professor Sheriden Delepine who also pioneered the development of bacteriological investigation in public health work. See. "On the Value of Experimental Diagnosis in Tuberculosis." in B.M.J. September 1893 and January 1894; "Bacteriological Diagnosis in Connection with Public Health Work." read at the Conference of Medical Officers of Health

- 173: at the Sixteenth Congress of the Sanitary Institute, Leeds, Sept. 15th 1897.
- 174: Arthur Newsholme, Fifty Years in Public Health, The Years Preceding 1909, (London, Allen and Unwin, 1935) pp. 244-260: 261-265.
- 175: S.M.O.H. Minutes of the Ordinary Meeting of the the Society, August 4th, 1894, also reprinted in Public Health, Vol. 6, 1893-1894, pp.
- 176: H.Timbrell Bulstrode, "Report on Sanatoria for Consumption and Certain Other Aspects of the Tuberculosis Question". in the Thirty-Fifth Annual Report of the Local Government Board, 1905-1906, [Supplement in continuation of the Report of the Medical Officer for 1905-06]
- 177: Ibid., pp.52-54
- 178: Ibid., pp.82-98; pp.248-252; pp.613-670
- 179: Ibid., p.77.
- 180: James Niven, "On the Communicability of Phthisis", in Public Health, Vol. 21, March 1908- September 1908, pp. 52-59; pp.101-112.
- 181: Ibid.

- 182: Ibid. p.103.
- 183: M. Bruce, The Coming of the Welfare State, (London, Batsford, 1965), pp.174-181; for discussion of the rise of the new Liberal Government in 1905 see: T.O. Lloyd, Empire to Welfare State, (London, O.U.P. 1979); H.V. Emy, Liberals, Radicals and Social Politics; 1892-1914. (London, C.U.P. 1973): A. Mackintosh, From Gladstone to Lloyd George, (London, Hodder and Stoughton, 1921); A.K. Russell, "Laying the Charges for the Landslide: The Revival of Liberal Party Organisation, 1902-1905." in A.J.A. Morris, Edwardian Radicalism 1900-1914. (London, Routledge Kegan and Paul, 1974), pp.62-74.
- 184: Ibid.
- 185: M. Cole, Beatrice Webb, (London, Longmans, Green and Co. Ltd. 1945), p.95.
- 186: Sidney and Beatrice Webb, English Local Government; Vol. 10, English Poor Law Policy, (Longmans, London, 1910, reprinted .. London, Cass, 1963.) pp.256-295.
- 187: Ibid., p.315
- 188: Cole, op.cit., p.98.
- 189: J.C. McVail, "Report on the Methods and Results of the Present system of administering Indoor and Outdoor Poor Law Medical Relief in Certain Unions in England and Wales", Appendix to, Report of the Royal Commission on The Poor Laws and Relief of Distress (London, H.M.S.O., 1909), Cd.4573, 1909, xlii. P.P., 1909, Vol: XIV, pp.335-675.

- 190: Beatrice Webb, "The Relation of the Poor-Law Medical Relief to the Public Health Authorities." in Public Health, Vol. 19, 1906-1907, pp.129-145.
- 191: Ibid. p. 137.
- 192: This view was extended in further attempts to proselytise it after the publication of the Minority Report, in Sidney and Beatrice Webb, The Doctor and the State, (London, Longmans, 1910); and in the famous preface to G.B. Shaw, The Doctor's Dilemma (London, 1911)
- 193: B. Webb, (1906), op. cit. p.138
- 194: For discussion of the development of "New Liberalism" see: P.F. Clarke, Lancashire and the New Liberalism, (Cambridge, C.U.P. 1971), P.F. Clarke, Liberals and Social Democrats in Britain in the Late Nineteenth and Early Twentieth Century. (Cambridge, C.U.P. 1978); S.A. Collini, Liberalism and Sociology, L.T. Hobhouse and Political Argument in England, 1880-1914. (Cambridge, C.U.P. 1979).
- 195: A.M. McBriar, Fabian Socialism and English Politics 1884-1918, (Cambridge, C.U.P. 1966), pp.270-278; also, Cole. op.cit. pp.100-109; for discussion of Fabian policy of "permeation" of the Liberal Party and method, see, M.Cole, The Story of Fabian Socialism, (London, Mercury, 1961) pp. 78-88; M.A. Hamilton, Sidney and Beatrice Webb, (London, Sow, Marston, 1933), pp.185-208.

- 196: McBriar, op.cit. p.272
- 197: For discussion of J.Burns, see, M.Cole,(1945),
op.cit. p. 76 and p.106.
- 198: McBriar, op.cit.
- 199: Although Mrs Webb got outright support from G.F. McLeary, other Council members such as Reginald Dudfield and Francis Bond advised caution. Ultimately the Council, on the suggestion of Louis Parkes, decided to set up a committee to consider their position and,more importantly , "to consider the propriety of taking evidence before the Royal Commission on the Poor Laws, and if considered desirable, and invited by the Commission, to arrange for such evidence to be given." Public Health, Vol.19, 1906-1907, p.144.
- 200: Editorial, "The Report of the Poor Law Commission" in Public Health, Vol. 22, 1908-1909, pp. 197-198.
- 201: Quoted from McVail in an Editorial on his report in Public Health, Vol. 22, 1908-1909, p.281
- 202: Ibid.
- 203: Beatrice Webb, "The Minority Report in its Relation to Public Health and the Medical Profession." read before the S.M.O.H. January 14th 1910, reprinted in

- 203: in Public Health, Vol 23, 1909-1910, pp. 153-164.
- 204: For discussion of the failure of the campaign for the "preventive framework" see, Sidney and Beatrice Webb, English Poor Law History, (London, Longmans, 1929, reprinted, London, Cass, 1963), Part II, "An Agitation that Failed?", pp. 716-723.
- 205: John Grigg, Lloyd George: The People's Champion 1902-1911, (London, Eyre, Methuen, 1978) pp. 157-189.
- 206: For history of development of national insurance in Great Britain, see, Bently.B. Gilbert, The Evolution of National Insurance in Great Britain. The Origins of the Welfare State. (London, Joseph, 1966) pp. 289-399.
- 207: For detailed account of framing and passing of the Act see, H. Bunbury, (ed) Lloyd George's Ambulance Wagon. (London, Methuen, 1957); see also, Lord Beveridge, Power and Influence. (London, Hodder and Stoughton 1953.) Ch.IV.
- 208: Insurance companies such as the Prudential were immensely powerful financial institutions; see Bently B.Gilbert, op.cit.pp.314
- 209: Grigg, op.cit. 313- 351.

- 210: Ibid.
- 211: Ibid. pp.331-334; see also, Bunbury,op.cit. pp.34-38.
- 212: Club practice had been fought against by the medical profession throughout the 1890s; see for example, "Battle of the Clubs" and "The Medical Profession and the Club System." in the B.M.J. 1896, Vol. I, p.859 and p.863, which illustrated the issues, and the collective action taken by individual groups of practitioners, in this instance in Lincoln, Stirling and Clackmanan.
- 213: B.M.J. 1911, Vol.II, "The . Insurance Bill Today", pp.1560-1562; "The Next Six Months", pp.1608-1609; "The Insurance Act.", pp.1666-1667. see also, Supplement pp. 395-512.
- 214: B.M.J. 1911, Vol.I, Supplement. "Special Meeting of B.M.A. on the National Insurance Bill, May 31st,1911." pp. 352 - 358.
- 215: Editorial, "The Health Provisions of the National Insurance Bill." in Public Health, Vol. 24, 1910-1911, pp.335-336.
- 216: H. Meredith Richards, "The National Insurance Bill", in Public Health, Vol. 24, 1910-1911, pp.374-387.

- 217: Editorial, "The National Insurance Bill." in
Public Health, Vol. 24, p.373.
- 218: Ibid.
- 219: Ibid.
- 220: Joseph Priestly (Honorary Secretary, 1899-1911),
"Letters from the Society to the Chancellor of
the Exchequer, May 27,1911, and June 14th 1911."
published in Public Health, Vol. 24, 1910-1911,
pp.399-401.
- 221: Grigg. op.cit.
- 222: B.M.J. 1911, Vol.II,op.cit.
- 223: Quoted by Margaret Cole from a conversation between
George Lansbury_ and James Davy. When Lansbury
asked Davy whether he thought that a hard labour
policy within the workhouse would not punish the
individual twice for becoming involuntarily unemployed,
Davy replied, "The unemployed man must stand by his
own accidents; he must suffer for the general good
of the body politic." see, Cole,(1945) op. cit. p.97.
- 224: Hamilton. op.cit.pp. 185-208.
- 225: McBriar, op.cit.

- 226: Discussed and quoted in an Editorial in Public Health, Vol. 25, 1911-1912, pp.41-42, "The Preventive Provisions of the Insurance Bill."
- 227: Ibid. p.42.
- 228: Ibid.
- 229: B.Webb in Public Health, Vol. 24, op.cit.
- 230: Jean Donnison, Midwives and Medical Men, (London, Heinemann, 1977); James Aveling, English Midwives Their History and Their Prospects. (Elliot, London, 1967); Jane B. Donegan, Women and Men Midwives, (London, Greenwood, 1978); C.Rosenburg (ed) The Male Midwife and the Doctor. (New York, Arno. 1974).
- 231: Donnison, op.cit. pp.135- 158.
- 232: S.M.O.H. Minutes of Council, Febuary 18th and 16th 1895.
- 233: S.M.O.H. Minutes of Council, May 30th, 1895
- 234: B.M.J. 1895, I pp. 1281 -1282
- 235: S.M.O.H. Minutes of Council, January 16th, 1893 and March 20th 1893.
- 236: Ibid.

- 237: Donnison, op.cit. p.149; B.M.J. , 1899, Vol. I, pp.43-47.
- 238: S.M.O.H. Minutes of Council, April 14th 1899
- 239: Ibid.
- 240: S.M.O.H. Minutes of Parliamentary Committee, Febuary 1899.
- 241: Ibid.
- 242: Ibid.
- 243: Ibid.
- 244: Ibid.
- 245: For debate on the Bill see, Hansard, Fourth Series (Commons) , Vol.103, Cols. 1152-1211
- 246: Brande. op. cit. pp.181-183; Donnison. op.cit.pp.169-173; 182-185.
- 247: J. Niven. "The Midwives Act, 1902." in Public Health May, 1906.Vol. 17, pp.499-517.
- 248: Ibid. p.500
- 249: Ibid.
- 250: Ibid.

- 251: Donnison, op.cit,
- 252: Dwork, op.cit., pp.280-310.
- 253: S.M.O.H., Minutes of Council. 15th January, 1899.
- 254: Brand, op.cit., pp.183-189.
- 255: See Newman in D.N.B., op.cit.
- 256: Editorial, "The Congress on School Hygiene, October 1907." (held in London under the presidency of Sir Lauder Brunton with secretary E.White Wallis) in Public Health, Vol. 20, 1907-1908, pp.1-3.
- 257: Controversy reigned over the appointment of Newman in the pages of the B.M.J. throughout 1907. It began with a letter from Dr. A.H. Hogarth that suggested the appointment of Newman implied apathy on the part of the Board and that if they had seriously wished to establish school inspection they would have appointed James Kerr. Hogarth's opinions were later supported by a letter from Edwin Nash, a research fellow at Victoria University, and subsequently challenged by Alexander Campbell Munro. Hogarth continued to emphasize that he was not trying to underestimate Newman's abilities but simply pointing to the compromise which his appointment represented on the part of the Board itself. See, B.M.J., 1907, Vol.II, p.772, p.854, p.940, and p.1019.
- 258: Arthur Newsholme, "The Children's Charter of Health." in Public Health, Vol. 20, 1907-1908; pp.161-163.
- 259: Ibid.,p.162
- 260: Ibid., p.163.

- 261: Quoted directly from Dr. Kerr's Annual Report, 1907, in an Editorial in Public Health, Vol. 20, 1907-1908, pp.229-230. For discussion of Kerr's achievements in London school inspection see,; J.D. Hirst, "A Failure Without Parallel. The School Medical Service and the London County Council, 1907-1912". in Medical History, 1981, pp.281-300 .
- 262: James Kerr, "The Future Medical Oversight of Elementary Schools." paper read before the Midland Branch of the Society, April 26th, 1906, published in Public Health, Vol. 18, 1905-1906, pp. 617-623.
- 263: Ibid.
- 264: Ibid.

THE PREVENTIVE IDEAL

The Society of Medical Officers of Health was only one of a number of institutions which identified its aims with the development of preventive medicine. It is possible to explore the preventive 'ideal' as it was created within this institutional context. Firstly, through an outline of the history of individual institutions which made up a community of preventive associations during the 1890s and 1900s. Secondly, in an examination of the exchange of ideas between the members of the community which took place at their meetings and congresses and the role of the S.M.O.H. in this exchange and the construction of the 'ideal' itself.

Institutional Community of Preventive Sciences.

Since 1856 the National Association for the Promotion of Social Science had maintained a division of its organisation which had concerned itself with the question of Public Health.¹ The British Medical Association had also had a Public Health Committee since 1868.² Perhaps the earliest organisation devoted to an inquiry related to the prevention of disease was the Epidemiological Society founded in 1850.³ During the 1870s and '80s however some new organisations were formed, aiming to promote sanitary science, the science of hygiene and preventive medicine.

The Epidemiological Society was formed under the presidency of Lord Shaftesbury.⁴ From the beginning the aims and objectives of the Society were both academic and political, acknowledging a need for an international basis to both the study and communication of research.⁵ The Objects of the Society outlined the process of studying epidemics as consisting of two areas of research: the one into the causes and the other into the spread of disease. Apart from research the Society also intended to,

ascertain the operation of existing legal enactments which bear upon epidemic diseases: to enquire into defects of these enactments, and point out such alterations as may be necessary for the protection of the public health.⁶

To communicate the findings of research was not sufficient. In the view of the founders, efforts should be made to seek help from "government boards, medical corporate bodies, public institutions and medical societies" to encourage the formation of "co-operating societies" to pursue this political goal.⁷

The first published report of the Council recorded a membership of 211, which included resident, non-resident, corresponding and honorary members.⁸ By the 1890s the membership had not increased significantly with only a slightly larger proportion of corresponding and non-resident members being added.⁹

The management of the Society was undertaken by a president, elected every other year, a treasurer and one or sometimes two secretaries. The Council of the Society was elected annually and varied in number each year from 10-16 members.¹⁰ The work of the Society was carried on in seven committees which were created during the 1850s. Originally the committees divided work on the basis of a disease classification which changed over time. The committees which dealt with correspondence on hospitals, inquiries into diseases of the vegetable kingdom and one which considered the question of supplying the labouring classes with nurses during an epidemic, survived into the 1890s. Secretaries were appointed to deal with correspondence on army and naval issues. Foreign and colonial secretaries maintained communication with international scientific communities.¹¹

The officials of the Society were some of the most distinguished individuals within the preventive medical community. Early presidents were pioneers in the field such as William Jenner (1866-68), Joseph Fayrer (1879-81), George Buchanan (1881-83), Richard Thorne-Thorne (1887-89). They were succeeded in the 1890s by Thomas Crawford (1889-90), Shirley Murphey (1894-96), Professor J. Lane Notter (1896-98), Patrick Manson (1900-02), William Corfield (1902, died 1903) and John Tatham (1905-07).¹² The membership was always a mixture of Medical Officers of Health, ex-Army

and Naval Officers and latterly civil servants from the offices of the Local Government Board. In 1890 for example, of 100 "ordinary members", (those who paid a full subscription and had the right to vote for council members and office holders) 20 were M.O.H.s, 13 were either retired or ex-Army or Naval surgeons and physicians now working in a London Hospital or teaching at Netley; 5 members were from the Medical Department of the India Office; and 6 were officers from the Local Government Board in Whitehall. Among the other members there was an Inspector General from Notting Hill, an Inspector General from Kew Gardens, two veterinary surgeons, the secretary of the London Fever Hospital and Sydney Martin.¹³ Amongst the non-resident (total 142) there were 64 foreign corresponding members. The non-resident members were in the majority English doctors stationed in India. Amongst the foreign corresponding members 5 were from North Africa, 7 from the Americas, 8 from Australia and Fiji, 4 from the West Indies, 2 from Russia and 23 European correspondents. The remaining correspondents were all from India.¹⁴

The membership of the Sanitary Institute was also mixed. The Sanitary Institute of Great Britain began when Dr. Lory Marsh inserted an advertisement in the Lancet and the Sanitary Record on the 1st July 1876.¹⁵ The initial impetus for forming such a body had previously arisen at a meeting of the Social Science Congress in June 1876.¹⁶ Copies of the advertisement were sent, together with applications for membership, to

members of both houses of parliament, to the chairman of every sanitary authority and their medical officer of health.¹⁷ The Duke of Northumberland was invited to become the president of the new Institute and at a meeting at which he presided at St. James Hall on the 13th July a resolution was adopted,

That in the opinion of this meeting the sanitary condition of this country is still very unsatisfactory, and that further legislation is necessary with a view to its improvement. With this object a society be now formed to be styled, "The Sanitary Institute of Great Britain." ¹⁸

An executive committee was subsequently formed with Lory Marsh as its chairman. He prepared a report which he delivered to the committee on the 26th September, that outlined the programme of services and functions which the Sanitary Institute should undertake. With regard to legislation he felt the Institute should make the complete registration of sickness one of its first aims. He thus anticipated the compulsory notification Acts of 1899. Marsh considered that the main function of the Institute however should be the preparation of candidates for examination for Local Surveyors and Inspectors of Nuisances. A board of examiners should be set up by the Institute consisting of representatives of preventive medicine, chemistry, engineering, and sanitary jurisprudence from amongst the membership. Finally, he suggested that the Institute should maintain a distinct communication with Medical Officers of Health, "in order to render them every assistance in the discharge of their duties".¹⁹

Marsh did not stay long enough to supervise the establishment of his proposals since he announced, in October, that he had taken a post in the Sanitary service of the army in Turkey and he would be leaving immediately.²⁰ The Institute therefore set up a council without him consisting of 24 members, a third of which was to retire annually with new members being elected in their place.²¹ Amongst the first council members there were two M.O.H.'s, William Corfield and Dr. Rogers - Field.²² Benjamin Ward Richardson was the first chairman of the council and he gave an address to the Institute on 5th July 1877 on "The Future of Sanitary Science in relation to Political, Medical and Social Progress".²³ During the same month the first Board of Examiners was set up, consisting of eleven members of the Institute, and in the autumn of 1877 the first Congress and Exhibition was held at Leamington.

The Institute developed some ideas which were quite ahead of its time and in 1879 it set up a School of Hygiene and appointed four lecturers. Ward Richardson lectured on preventive medicine, Henry Michael Q.C. on Sanitary Law and Jurisprudence, William Corfield on practical sanitary science in its medical and chemical aspects, and Captain Douglas Galton on Sanitary Engineering and Construction. The courses were available to all candidates for the Institute's certificates, but also to Medical Officers of Health wishing to take additional studies as part of their preparation for the D.P.H.²⁴

In 1880 the office of Secretary to the Institute became vacant and Mr White Wallis was elected.²⁵ Wallis was to become responsible for amalgamating the Institute with the Parkes Museum, of which he was the curator. The Parkes Museum was a memorial founded in recognition of the achievements of Edmund Alexander Parkes the first professor of hygiene. Parkes was an army surgeon who founded a military hospital during the Crimean war in 1855 at Renkoi on the Asiatic side of the Dardanelles.²⁶ The hospital was designed by Isambard Kingdom Brunel and its construction was supervised by them jointly. Parkes returned to London in 1856 and in 1860 accepted the first chair in Military Hygiene at the Army Medical School, based at that time in Chatham. In 1863 the School was transferred to the Royal Victoria Hospital at Netley. Parkes died in March 1876 and at a public meeting held on the 18th June 1876 at University College, under the presidency of Sir William Jenner, it was resolved that a memorial to Parkes should be a museum of hygiene.

By 1883 the Parkes Museum and the offices of the Sanitary Institute occupied the same address at 74a Margaret Street. At that time the two institutions also shared the same secretary/curator in the person of Mr White Wallis and the same Chairman/President, Captain Douglas Galton. The amalgamation of the two

the aid of Wallis. The new amalgamated company became Incorporated in 1892.²⁷

Douglas Galton was the central figure in the development of the amalgamated company during the 1890s. He was chairman of the Council at three separate periods, held the post of treasurer from 1894 and remained the chairman of the board of examiners until his death in 1899. Galton had previously worked with : Edmund Parkes when he was a lecturer in Military Hygiene in Parkes's department at Chatham in 1861-63. During the same period he had worked on the Commission on British Military Barracks and Hospitals and undertaken the task of designing the Herbert Hospital at Woolwich. He was made Director of H.M. Office of Works 1869-75 and joined the Sanitary Institute in 1878.²⁸

Galton was one of a number of ex-military officers who were involved in the management of the Sanitary Institute, who had previously served with Edmund Parkes, either during the Crimean War or at the Medical School in Netley. Professor François de Chaumant (1833-1888) for example, entered the army as an assistant surgeon to Parkes during the War and later followed him to Netley in 1863. He eventually succeeded Parkes to the Chair of Hygiene in 1873. Chaumant was a member of the Council of

Sir Thomas Crawford (1824-1895) began his military career in 1848, served in Burma 1853, the Crimean 1855, the Indian Mutiny 1858 and the Afghan War 1880-82. He was recalled to London by Sir William Muir to take up the directorship of the Netley School. He first became involved with the Parkes Museum in 1883 and was chairman of the Sanitary Institute 1892-94.³⁰

Another group of council members from the Institute had been associated with Isambard Brunel. William Eassie (1832-1888) had trained as a civil engineer and served as an assistant to Brunel in the supervision of the construction of the Hospital at Renkoi. He was a member of the Council of the Institute 1877-88 and chairman of the Board of Examiners 1878-1891.³¹ Henry Law (1824-1900) was an architect who had been articled to Brunel from 1837-44. He joined the Sanitary Institute in 1877 and served on the Council until 1899 becoming Chairman that year but died in 1900. He was also chairman of the board of examiners 1891-94.³²

Some sanitarians from the Social Science Association were recruited to the Council. Chadwick himself was president at one of the earliest Congresses in 1878 and his colleague and friend Alfred Carpenter (1825-1894) became a member of Council during the same year. Since his appointment with the Croydon Board of Health he became a leading authority on sewage farming, presenting many papers on his research at the S.S.A. He was one of the first examiners of

Public Health for the University of London and in 1881 served on the Commission investigating London's Fever Hospitals. He was chairman of the Institute 1883-85.³³

Apart from this distinguished collection of ex-military medical men, architects and sanitarians the Council also consisted of a number of leading figures from the Society of Medical Officers of Health. Amongst the chairmen of the Institute were William Corfield, Alexander Wynter Blyth., Louis Coultman Parkes, Percy Boulnois, Henry Kenwood and Alfred Bostock Hill. Blyth., Corfield, Parkes and Kenwood also held the post of treasurer and Parkes was registrar for a time.³⁴

The Epidemiological Society and the Sanitary Institute both maintained firm links with the sanitary cause of the Chadwickian era. By the 1890s however organisations concerned more specifically with the advances in hygiene and related sciences of preventive medicine were established. The College of State Medicine for example was set up in 1886 to fill a gap in the education of M.O.H.'s. When Surgeon General Cornish gave an account of the origin of the College in 1891 he described its founding members as,

several officials in the Public services, who had great practical experience in connection with the health of the navy, army and public services in India and the Colonies, were extremely dissatisfied with the requirements in hygiene of the medical men entering the various medical departments. 35

Cornish drew attention to the fact that during the early 1880s there had been no legal qualification of "medical officers as hygienists" and that only a limited number of medical schools provided instruction in hygiene or public health. In March 1886 a group, such as Cornish described, met in the offices of the Volunteer Medical Association. The College began from that date and occupied two rooms at King Street loaned to them by the B.M.A. By 1887 the College was incorporated under the sanction of the Board of Trade under four articles of association. The articles set out the purpose of the College clearly: to establish an institution, in London, to aid the theoretical and practical investigation of hygiene science; to promote investigation of any other branch of state medicine; the appointment of research and teaching staff; to take any further measures to assist the objectives outlined.³⁶

The College was set up as a non-profitmaking teaching and research institution where post-graduate medical students were prepared and examined for the Diploma in Public Health. The management of the College was conducted by a large council, with a Chairman, a secretary and treasurer. Cornish was appointed both secretary and treasurer for the entire period that the College existed and Joseph Fayrer was the chairman. In 1891 the Prince of Wales became the president.

Cornish was the central figure of the College throughout its existence as an independent institution. William Robert Cornish (1828-1897) had spent the majority of his career working for the East India Company at Madras from 1854. He was made Surgeon General in 1860 when he became secretary of the Medical department and in 1870 he was promoted to Sanitary Commissioner to the Government of Madras. In 1880 he was made honorary physician to the Queen. After his retirement he devoted his time to the College and his work as a Governor of St. Georges's the hospital at which he had originally qualified.³⁷ Many of the features of Cornish's career were paralleled by Joseph Fayrer (1824-1907). Fayrer, unlike Cornish, was educated in Scotland, joining the Army medical service in India in 1849. He was posted to Bengal eventually becoming Professor of Medicine at Bengal Medical School 1859-74. After the investiture of the Prince of Wales he accompanied him as his physician throughout his Royal tour of India. He became President of the Medical Board of India 1874-35. He was honorary physician to the Queen and physician to the Duke of Edinburgh.³⁸

Originally the College appointed Edward Klein as Professor of Bacteriology and William Smith as Professor of Hygiene.³⁹ Klein resigned however in 1891 and Alan Macfadyen took his place. Smith also left in 1891 to take up an appointment at Kings College. He was replaced by Wynter Blythe who also

From the beginning the College had been unsuccessful financially even though it had received considerable awards from the Berridge Trust. In 1889 another laboratory for bacteriological research was founded, which eventually amalgamated with the College in 1892. The British Institute for Preventive Medicine had been founded principally by Joseph Lister as a first attempt at establishing a bacteriological research institute based in London. Its progress had been somewhat hampered however by the anti-vivisectionist movement and the necessity of obtaining a licence for undertaking experiments on animals. The College of State Medicine already possessed such a licence and it was for this reason that Henry Roscoe who was on the council of both bodies proposed an amalgamation, which was eventually completed in December 1893.⁴⁰ Macfadyen continued to hold his post in the new institution and the teaching facilities of the college were also incorporated successfully. Under the directorship of Armand Ruffer the Institute became the first service station supplying diphtheria anti-toxin in England, provided a diagnostic facility for thirty London hospitals and maintained a research staff of nine bacteriologists. In 1898 the Institute changed its name and address. It moved to Kensington and received new funding from the Iveagh Benefaction and the Jenner Memorial Fund, changing its name to the Jenner Institute. After the death of Joseph Lister in 1901 it changed its name again in memory of its founder and as the Lister Institute achieved international

fame for micro-biological and bio-chemical research.⁴¹

After the College of State Medicine ceased to exist as an independent body in 1892, a new organisation was founded in the same year by its former professor of hygiene William Robert Smith.⁴²

Smith had become Professor of Forensic Medicine and the director of the laboratories at Kings College, in the University of London in 1891. When the amalgamation of the College of State Medicine seemed imminent he founded a new organisation to pursue research and to remain in contact with the practical administration of Public Health. He had a vested interest in both as the M.O.H. for Woolwich from 1890. The Institute founded in 1892 received Royal patronage and, from 1906, became the Royal Institute of Public Health. Joseph Fayrer was to its first President. The first Journal of the Institute (Vols. 1-14, 1892-1906) were entitled the Journal of State Medicine and from 1907-1937 the Journal of the Royal Institute itself (Vols.15 onwards). In 1937 the Royal Institute amalgamated with the Institute of Hygiene which then became the Royal Institute of Public Health and Hygiene.⁴³

The Royal Institute of Public Health established an important vehicle for the communication of research through its seasonal meetings, annual congresses, its journal and a series of summer lectures which bore the

Lectures.⁴⁴ The institute also ran permanent courses for candidates for the Diploma in Public Health and maintained laboratories for bacteriological and chemical research. The Harben Lectures included some leading scientists during the early years; in 1906 Elie Metchnikoff, and in 1907 Paul Ehrlich. The congresses and the council were managed with considerable help from the members of the Society of Medical Officers of Health.⁴⁵

Although the Sanitary Institute had established an exhibition of Sanitation and a school of hygiene in 1880, there were a group of men in 1903 who felt that there was still a need for an exhibition centre devoted to the advancement of hygiene. A council chaired by John Clough Tresh was formed to develop and govern such an institute. Thresh was a colleague of William Smith's both as a lecturer in Public Health at Kings College and as the editor of the Journal of State Medicine. He was the M.O.H. for Essex County Council from 1888 and became secretary to the S.M.O.H. in 1893.⁴⁶ Together with J. W. Eyre who took the chair of bacteriology at the Institute after 1937, and a physiologist, Dr Strickland Goodall, they opened the doors of the Institute of Hygiene on November 11th, 1903, at 33-34 Devonshire Street. Initial support for the exhibition centre was provided by manufacturers but early in 1905 after innumerable

The Institute was re-constituted in 1908 under a new president Sir William Broadbent. A large council was formed and chaired by the M.O.H. for Tottenham, John Butler-Hogan. He remained chairman until his death in 1912.⁴⁷

The central characters involved in this collection of institutions made up the preventive community during the initial years when "prevention" was first established as a scientific medical profession. Consolidation of the preventive ideal was achieved through the interaction of this community.

Aims and Objectives: From Sanitary Control of the Environment to Preventive medical Preservation of Health.

In 1881 Edwin Chadwick addressed the Social Science Association on the relative values of "Preventive and Curative Science". He was prompted to speak after attending the International Medical Congress which had taken place earlier that year in July.⁴⁸ Chadwick remained unimpressed by the proceedings of the Congress as a whole because such little time had been devoted to the discussion of preventive topics. Given the extensive economy, both financial and in the saving of human life, achieved by the Sanitary Service, in both a military and civil context, Chadwick believed that the relative positions of curative medicine and sanitary science were inappropriate. The lack of attention given to sanitation at the medical congress only symbolised for Chadwick

the lack of support it received by the medical profession as a whole, and more importantly by the legislature and civil administration. For all the risks and acts of bravery by the Sanitary Commissioners, sent by the General Board of Health, during the Crimean campaign,

not one received any notice or decoration, or assured position, notwithstanding the avowal of the War Minister that their science had saved the second army. On their return it appeared that the preventive service would have been dispensed with as no longer wanted ... nor was there any proper effort to provide sedulously for the organisation of the new service, the efficiency and great economy of which had been so conspicuous. 49

In the same way as the role of the sanitary service in war-time had been ignored so the role of sanitation in the economy of civilian life remained overlooked. The consequence was the persistence of morbid conditions which resulted from defective legislation and defective local administration. Chadwick contrasted this defective system with what could be achieved when sanitary science was supported in its goals. His example was the sanitary work undertaken by Alfred Carpenter at Croydon and the value of his experimental work in sewage farming had achieved. Such work was an example of how effective sanitation of a city could also benefit agriculture. The "preventive civil service" had in one decade, Chadwick maintained, preserved a quarter of a million lives, over three million cases of sickness, forty thousand military forces and eight million pounds for only one decade. But it could achieve

even greater success,

by the constant distribution of water into all houses and by the constant removal of the fouled water, together with all putrescible matter ... in other words, by complete action on the sanitary principle of circulation ... the sickness and death rates of the cities and towns may be reduced by one-third or by one-half.⁵⁰

In addition, sewage farming coupled with compulsory land drainage, could ensure the health of men and cattle and increase agricultural production.⁵¹

This discussion by Chadwick was something of a last testament to prevention as a "sanitary idea". It outlined the reasons why the sanitarians and their preventive cause were alienated from the medical profession. To some extent it illustrated how even in the 1880s, in the post Simonian period, there was still a case for Chadwick to articulate in this respect. Preventive science and curative medicine remained separate phenomena despite the hopes of John Simon that the one would be absorbed by and incorporated into the other.

The preventive community of the 1890s accepted that preventive science was separate from and to some extent in conflict with, curative medicine, but the Chadwickian conception of prevention was contested by them. By the 1890s even the pages of the Transactions of the Epidemiological Society, which had developed in Chadwick's era, reflected emergent theories of prevention which were as distinct from the sanitary idea as from curative medicine.

Joseph Ewart was a doctor who eventually became the Mayor of Brighton.⁵² He served as President of the Epidemiological Society between 1890-1892 and the inaugural address for both of his terms illustrated this contrast sharply. In 1889, Thomas Crawford had devoted his presidential address to a routine discussion within the Society, on the statistical analysis of Colonial fevers. In 1890 Joseph Ewart, however, took the opportunity to analyse the achievements and value of existing legislature for the prevention of epidemic disease. He began his address by citing the advance made in preventive science, which was dependent upon,

the uninterrupted extension of our knowledge regarding the etiology and natural history of infectious and communicable diseases and the imperfectly understood conditions which, from time to time, facilitate their diffusion in an epidemic form. ⁵³

Thus prevention was based on "epidemiology and its hand maiden, hygiene".⁵⁴ The concept of sanitary engineering, however effective, was based, Ewart suggested, on that knowledge developed during the Victorian era which it was necessary to "unlearn" in order to discover the mechanism of "spreading diseases".

The net result of this learning and unlearning has been to clear the ground, to mark progress in the right direction to secure greater exactness of the knowledge required. ⁵⁵

Ewart's great regret however was that although etiology had progressed, legislation to prevent disease had not.

None of the measures springing out of this legislation can be regarded as being fairly abreast of the advanced science and social economics of the day. ⁵⁶

By way of example, Ewart deplored the adoptive nature of the 1889 Notification Acts which, he claimed prevented a uniform system being applied. Ewart pointed out that the Act did not alter the legal position of the M.O.H. but could be used to provide increased information to impress upon the local authority the need for sufficient provision for the isolation of cases of infectious disease. When he turned his attention to the question of unhealthy dwellings he felt the only remedy would be to attack the "root and branch" through an improved Housing for the Working Classes Act.⁵⁷ In 1891 he argued that this could be achieved by abandoning "old-fashioned ideas of the sacredness of property". The root and branch, Ewart believed, was to give the sanitary authority the power to demolish, rebuild and rehouse whole areas which had been designated unfit for human habitation. His second address to the Society attacked the Legislation for London's Public Health (1891) for incorporating the fundamental weaknesses that the entire public health system sustained. The London Bill perpetuated

the property qualification and a consequent lopsided electorate unduly favouring the owners of insanitary houses, will still be, in the future as they have been in the past, almost all powerful in declining to carry out the sanitary reforms authorised by law.⁵⁸

The weakness of public health legislation therefore, Ewart believed, was that it placed the law of property over the laws which governed the dissemination of disease. To emphasize his point he devoted the remainder of his 1891 address to an erudite account of the history of the "germ-theory" of disease and the current state of bacteriological theory. The analysis began with an account of the original concept of *contagium vivum*, followed by a discussion of its development in the work of Pasteur and Koch and the emergent theories of immunology expounded by Metchnikoff and Behring. Ewart cited the work of Mitscherlich, Wohler; the Liebig-Berzelius theories and the contentions of Latour and Schwann; the debate with Pouchet; the work of Davine and Rayner.⁵⁹ He pondered however in conclusion to his survey, that if so much was known about causation then why was epidemic spread still not contained. In the words of the Prince of Wales at the Hygiene Congress in 1891, "If preventable, then why not prevented?".⁶⁰

The answer in Douglas Galton's mind was that, despite all the facts which had been discovered about microbes and disease causation they "have not shaken the broad principles of sanitation, namely that our surroundings should be as healthy as possible."⁶¹

The prevailing environmental theory in the Sanitary Institute represented by Galton was however challenged by the Medical Officers of Health among its membership. Galton's reply had in fact been made to a paper given by Wynter-Blythe at a sessional meeting of the Institute in March 1891. Blyth had delivered a paper on the political aspects of prevention which were determined by the scientific understanding of disease causation and dissemination. He emphasized that the way forward in prevention lay with the then infant discipline of immunology. However, bacteriology had in Blythe's view already demonstrated that contamination in food as much as in dust particles in the air were the preventable mechanisms of dissemination. Identification and the analysis of the behaviour of specific bacteria made the "prevention of spread" possible through notification, isolation and disinfection. Blythe argued that the discovery of "causation" was the only means of prevention with scientific certainty.⁶²

The political features of prevention were linked to scientific ones in arguments such as that presented by Charles Paget, M.O.H. Salford, at the Liverpool Congress of the Sanitary Institute in 1894.⁶³ In the first years following the 1872 Public Health Act there was no clear guide-line as to the function of the provincial M.O.H. The newly appointed officers learnt by trial and error using their "industry, tact and intelligence" to secure the confidence of their various boards of administration. To combat their isolation,

provincial officers following the example of what Paget called their "metropolitan brethern",

banded themselves together into associations for the purposes of inter-communication and mutual assistance in their labours. Hence the formation of our Incorporated Society of Medical Officers of Health and that unbroken brotherhood which has fortunately so far distinguished the body of the health officers. 64

It was this "unbroken brotherhood" of "only those who were willing to fit and train themselves for such a high calling" which, in Paget's view, linked scientific hygiene and the preventive profession. For this purpose the teaching of hygiene began as part of the ordinary curriculum of the medical schools leading eventually to specific training and a restrictive qualification. The standard of officer depended upon the degree of stringency of specialised knowledge demanded from the candidates for the D.P.H. The problem which remained, Paget believed, for the "unbroken brotherhood" was to make the value of the Diploma meaningful. This could be done in two ways. Firstly through increasing specialisation, legitimizing the professionalisation of practice, and secondly, through the universal application of the restriction in the appointment of all officers. The 1888 Act left sanitary districts with a population of less than 50,000 exempt from the compulsory appointment of only qualified officers. Paget felt that until such a double standard was abolished the significance of the D.P.H. was devalued. The answer lay in the combination of small

the appointment of full-time qualified officers on appropriate salaries.⁶⁵

The role of the M.O.H. however was still viewed cautiously and critically by other members of the Sanitary Institute. For example, Thomas Crawford took the opportunity of a reception for the B.M.A. held at the Institute in July 1895 to air some reservations, which were generally held about the power of the M.O.H.⁶⁶ The object of the reception was as Sir Thomas pointed out, to give the B.M.A. representatives an opportunity of seeing what the Institute was doing. No debates or "protracted discussions" had been planned but instead the Institute proposed to hold a meeting wherein, "it had been thought well to choose subjects on which they would have a friendly talk".⁶⁷ Crawford proceeded however to present a paper before the delegation designed to achieve precisely the opposite. He examined the role of the M.O.H. in administering the notification laws. The need for full-time officers was recognized by all because among other things Crawford suggested that a M.O.H. who also maintained a private practice was put, "in the unenviable position of being supposed to interfere with his neighbours, the ordinary practitioners".⁶⁸ Crawford emphasized his own neutrality in observing the behaviour of M.O.H.'s with regard to the notification law, being neither a public health officer or a general practitioner

Presumably he did not believe that his service in military medical practice biased him in any way. He felt that behaviour of the M.O.H. with regard to notification had justly turned the opinion of the general practitioner and local community against the public health office. Removal of the infectious sick from their family was contrary to the English character.

The English people were not afraid of risking either their lives or their health in the interests of those whom they loved, and they were consequently not easily persuaded to part with any member of their family simply because he or she happened to be suffering from an infectious disease.⁶⁹

Hostility from the families of the sick was matched, Crawford suggested, by that of practitioners in the districts. The practice of secondary diagnosis by the M.O.H. undermined the practitioners' authority and prosecutions for failure to notify were unjustified. Crawford deplored the fact that he had known of cases where a M.O.H. had used detectives to secure a successful prosecution. Generally, he believed that the list of notifiable diseases was too extensive and that a number of those listed did not require removal and isolation of the patient. In his own experience, small-pox, diphtheria, typhoid and relapsing fever were amongst those conditions that could be dealt with, "in any well-regulated house, with careful nursing, attention to cleanliness etc. without any need for removal to a hospital."⁷⁰

Crawford was convinced that the notification laws should be executed with the consent of the people rather than through coercion.

In the discussion which ensued, Alfred Hill (Birmingham) and John Fredrick Sykes (St. Pancras) defended the preventive faith. To begin with, both officers insisted that there was no resistance amongst the general public to being sent to an isolation hospital in cases of infectious fevers. Sykes and Hill suggested that in the experience of the majority of public health officers, infectious patients and their families were on the contrary glad to go into hospital and enjoyed their stay there. In London the Metropolitan Asylums Board were overburdened in their budget and almost unable to cope with the demands of isolation costs. The act of removal, Dr. Hill reminded Crawford, was legally a voluntary one which could only be recommended by the M.O.H. and not enforced. Both Hill and Sykes agreed that the confirmation of diagnosis was an ill-considered procedure. Until the law required bacteriological confirmation of the diagnosis of infectious disease by the practitioner, such action, although an asset to the efficiency of the public health office, did incur difficulties. Sykes and Hill seriously questioned the reliability of a report which had suggested that an M.O.H. had use of detectives. The usual procedure was to write to the

practitioner involved before prosecution was undertaken.⁷¹

The relationship between preventive medicine, curative practice and the sanitary conception of the public health was thus, not altogether an easy one. Although conflicts revealed themselves in the context of the Sanitary Institute, many M.O.H.s contributed to the lecture courses for Sanitary Inspectors in the Metropolis and the Provincial regions. Basic differences remained between the Sanitarians of the Sanitary Institute and the preventive practitioners. The former primarily maintained an environmental conception of regulating the public health. The scientific basis of preventive medicine was expanding this conception however into a comprehensive preservation of conditions for the health of both the community and the individuals within it.

This comprehensive approach was clearly expressed within the context of the Royal Institute for Public Health. The interests of M.O.H.s dominated the Institute and from 1906 a complete curriculum for the D.P.H. was established. Extensive facilities for chemical and bacteriological laboratory research were also available for M.O.H.s at the Institute.⁷²

During the first year in which the D.P.H. was

established the Institute held an annual Congress at Douglas in the Isle of Man. The inaugural address to the section of Preventive Medicine asserted the comprehensive character underlying the science of prevention in the future. Sir James Barr, the author of the address, was infact a clinician, chairman of the Faculty of Clinical Medicine at the University of Liverpool.⁷³ The preservation of health was as important to a clinician as it was to a sanitarian, he maintained, since it was the source of all wealth and progress. A clinician was presumed to have a vested interest in disease to justify his expertise, but the greater form of cure, he believed, was in prevention. For this reason the extensive funding which at present went into the cure of disease should be better applied to prevention. The failure to do so had already resulted in a depreciation of the nation's population.

Barr referred in particular to the report of the Interdepartmental Committee on Physical Deterioration completed in 1904.⁷⁵ Sir James said that he was taking the opportunity of being on the Isle of Man to

freely talk about His Majesty's subjects and our legislators -I shall not offend their intelligence by calling them statesmen, as statesmanship seems remarkable by its absence from the present administration. No-one seems prepared to look beyond the present exigencies of political life. ⁷⁶

This shortsightedness was a failure of the State to fulfil its duty to make adequate provision for the

preservation of health on which the strength of the future nation would depend. Above all, neglect of the health of mothers and children would lead directly to an enfeeblement of the State. Emphasis on the aged he felt was misplaced. He thought that care of the elderly should become the responsibility of the rich: "Regarding the aged, I would put a special tax on millionaires for their support".⁷⁷ He believed this would fulfil two functions, since the accumulation of capital on a vast personal scale was directly contrary to the interests of the community and its strength.

Huge trusts and millionaires are a positive danger to society, the former should be rendered illegal and every time the latter accumulated a million he should be relieved of half if it The enormous amount of human misery and suffering that is caused directly or indirectly in the accumulation of these huge fortunes is incalculable.⁷⁸

Sir James Barr believed the Isle of Man afforded him freedom of speech and allowed him to develop an extensive analysis of the relation of state intervention and the preservation of health. His holistic conception of control extended to the use of eugenic engineering to obtain the fittest race.⁷⁹

The combination of science and comprehensiveness in the preservation of health was evident throughout the proceedings of the Royal Institute of Public Health. The sections of the Congress enlarged every year during the 1900s, eventually including preventive medicine,

bacteriology, child study, industrial hygiene, veterinary hygiene, architecture and engineering. The departments of the Institute increased. By 1911 the original debt incurred from the initial expense of setting up the laboratories had been paid and that year a new department of Agricultural Microbiology was begun. The department of National Health was also expanded in 1911 to include not only the training of M.O.H.'s but also Health Visitors and School Nurses. The certificates of the Institute were recognized immediately by the L.G.B. as being a bona fide qualification for these offices.⁸⁰

The case for state intervention was clearly articulated in the discussion which took place on the relationship of disease dissemination to the housing question and town planning. In 1908 a lengthy debate was conducted at the sessional meetings of the Institute and at the Congress at Buxton. The chief protagonists were Henry Vivian, Raymond Unwin, Barry Parker, Ewart Gulpin, J. H. Barlow and Professor Geddes.⁸¹ After the debate at the Buxton Congress the Institute added a new section to its annual congresses beginning at Birkenhead in 1910 to deal specifically with Housing and Town Planning.

The themes of the 1908 debate were that physical degeneration was linked to overcrowding because of the extent to which it spread communicable disease. The housing issue was no longer one which concentrated on

sanitary building regulations but became a discussion of the re-distribution of a population of potential disease carriers. The motivation behind the planned regulation of city growth was to control individual health in order to prevent deterioration of the community.

The housing question in 1908 combined an analysis of land economics, physical degeneration and disease spread. Henry Vivian for example, utilized a survey of child development in Edinburgh to support his claims for the value of municipal housing provision.⁸² The "City of Edinburgh Charity Organisation Society" studied a group of one hundred children aged 6-13 from different types of schools who were living in one, two, three or four roomed accommodation. The study produced a direct correlation between increased weight and improved accommodation space among children of all age groups and school types.⁸³ Vivian quoted a similar study completed by George Newman, M.O.H. for Finsbury at this time, in his Sanitary District. Newman had correlated death rates for 1903, '04, and '06 in three categories, "All causes", "Phthisis" and "Respiratory Diseases" with size of dwelling. The conclusions indicated from his survey was that phthisis increased with density levels in the district more than the other disease categories which Newman had investigated.⁸⁴

A similar approach to the economic aspects of tuberculosis was presented at a sessional meeting of the Institute by Lieutenant-Colonel Robert Caldwell.⁸⁵ Caldwell used the census material of 1901 to support his analysis that the spread of the tubercle bacillus resulted from,

the degrading conditions associated with the slum population of great cities ... To state the case in as few words as possible, to eradicate the tubercule we must eradicate the slum. ⁸⁶

Partial remedies were futile in Caldwell's opinion. Schemes such as model dairy-farms, prevention of indiscriminate spitting, educating the masses, etc, "leave untouched the social causes which render the eradication of the disease impossible."⁸⁷ The spread of the tubercle bacillus was inherently linked to economic and social conditions but Caldwell insisted that the necessary preventive medicine was not an issue of political controversy; "Members of the medical profession are however raised above the level of the party platform."⁸⁸ They simply brought a dispassionate judgement to bear upon the economic causes and prevention of the disease. Caldwell realised however that any attack on "powerful vested interests" excited vigorous opposition which in the case of prevention of tuberculosis was unjustifiable.⁸⁹

The economic features of disease spread were the soil in which the bacteriological agents of

infection flourished. Such was the logic behind the arguments for town planning and garden cities presented to the Institute of Public Health at the Buxton Congress in 1908. Ewart Gulpin was the secretary of the Garden City Association, and he compared the aims of his organisation to the vision of Benjamin Ward Richardson's city of "Hygeia". The correlation of zymotic disease concentration with the most densely populated areas of London was one which would never change, Gulpin maintained, if the demolition of slums resulted only in their re-creation through such schemes as the "model dwellings" erected on slum sites by individual boroughs. He believed the failure to grapple with the disease-density relationship resulted from "the haphazard way in which town development has been allowed to go on in this country."⁹⁰

Parker and Unwin agreed with Gulpin at the Buxton Congress that, "towns have been allowed to grow up in a disorderly and ill-considered manner".⁹¹ It was "to stem this devastating tide" that the Garden City movement had demanded, and were about to obtain, powers of town planning for Local Authorities. The power to control the growth of towns however, should, in Parker and Unwin's view, be used to make settlements healthy by making them beautiful. They condemned the minimum sanitary requirements for replacing community health. The effect of a beautiful environment on health was a "truth urged by Ruskin, William Morris and others" and at last recognized by doctors.⁹²

This was given some acknowledgement at least by the doctors who were members of the Royal Institute of Public Health. The planned growth of towns however was only one part of the holistic concept of controlling communicable disease and preserving the health of the community which was represented in the preventive ideal. It was only one facet of the comprehensive character underlying the emergent practice of preventive medicine as a form of social efficiency. In 1909 at the Leeds Congress of the Royal Institute, Arthur Newsholme claimed that preventive medicine was the communal action upon which social efficiency depended. Social efficiency was in practice,

preventive medicine, which should govern the supervision and control of communal life. ⁹³

In order to fulfil this function a wider concept of public administration was necessary; "a vision of the whole" was needed to replace "the old hand-to-mouth and empirical method". As a result,

the conception of poverty and destitution as an element, when it is in fact a complex compound, will disappear and which supplies doles to relieve the symptoms of destitution without making efficient efforts to investigate the varying causation and to initiate preventive measures against its recurrence. ⁹⁴

Poverty and disease were inherently linked as far as Newsholme was concerned. The essential cause

of poverty was disease but he was not naive enough to believe that this relationship was over determined. "Poverty itself is one of the most potent causes of poverty."⁹⁵

Social efficiency depended on preventive medicine however because the latter was based on an essential principle of the knowledge of causation.

The one great principle distinguishing rational medicine from empiricism is that the former ... endeavours to determine the causation of disease and to prevent the continued operation of the causal agents It is amongst the causes that we find our means of efficient attack. ⁹⁶

Newsholme suggested that this division was an historical one corresponding to two stages in the development of preventive medicine. First "emerged the crude idea that local insanitary conditions, irrespective of specific infections caused epidemic disease". The earlier sanitary reforms, whilst he did not wish to belittle them, were a "first approximation of the truth". Medical organization of prevention succeeded the sanitary idea and in the control of infectious disease,

the collective have gradually overshadowed the personal aspects of the problem, the dread of disease having been more powerful motive than the fear of pauperisation ... this has meant for the individual the prevention and treatment of disease and for the community protection from the inefficiency which is its most serious associate and sequel ... The social and the individual are inextricably interlaced. ⁹⁷

Newsholme advocated prevention as the best investment that the community could make. To fail to do so would not be thrift but "parsimony , which refuses to make the expenditure needed for efficiency". Thus Newsholme believed that, "Large expenditures in social improvement are the truest thrift".⁹⁸

Newsholme reflected the preventive ideal as social efficiency; the control of communal life for the elimination of disease and destitution. Holistic administration based on the guiding rational principle of causation was the means to realize this ideal. Comprehensive preventive practice therefore, depended on increasing knowledge of specific disease causes which would expand the range of preventable conditions and that, "public administration will extend beyond its present limits to meet this expansion."⁹⁹

The parameters of the preventive ideal, articulated by Newsholme, were re-affirmed in the pages of the journal of the Society of Medical Officers of Health, Public Health. From the first publications of the journal, the role of bacteriology was emphasized and a regular feature contained reports of recent researches and developments in theory was established.¹⁰⁰ The value of bacteriology to the practical duties of the M.O.H. was discussed before the meetings of the Society by individual officers and by invited guests from the community of preventive scientists. Edward Crookshank ,

the first professor of bacteriology at Kings College, completed an elaborate history of the "germ theory" for the Society throughout 1889.¹⁰¹ Alan Macfadyen, from the Jenner/Lister Institute frequently contributed to the journal, for example, with his essay on the use of bacteriological diagnosis to increase efficiency of the notification and isolation systems. But more importantly Macfadyen suggested that bacteriological science was responsible for reinterpreting the nature of preventive problems. Even the environmental questions which had been addressed by the sanitary engineers were essentially biological issues, since soil, air, water and food "have to be considered as possible media for harbouring and conveying the living germs of disease".¹⁰² The way in which this biological conception of causation was changing the practice of prevention was illustrated, Macfadyen believed in the way serum therapeutics, resulting from Behring's work on immunity, linked prevention and cure directly.

Experimentation has shown that an anti-toxin can act both as a preventive and curative agent - thus, in the case of experimental tetanus, the serum from a previously immunised animal when injected into a guinea-pig is not only able to prevent the disease but also to cure it - even when the tetanus symptoms have supervened. 103.

The diphtheria serum similarly had preventive qualities and could be used for immunising healthy

Walter Pakes, the Professor of Hygiene at Bedford College for Women, concurred with the view held by Macfadyen. The application of bacteriology to public health administration had two direct functions. Firstly, in diagnostic examinations the techniques advanced constantly, increasing the accuracy with which the M.O.H. could decide whether or not to isolate a patient. The analysis of throat swabs was a particularly good example of the value of eliminating confusion with this method. Secondly, preventive examinations of water moulds, milk, ice-creams etc. were the source of efficient environmental control.¹⁰⁵

Medical Officers themselves acknowledged these issues. Dr. Annis M.O.H. Huddersfield described the 1900s as a decade in which the M.O.H. was to be dominated by the preventive value of serum therapeutics.¹⁰⁶ And it was for this, and all the other advantages of bacteriological research, that moves such as that of the London County Council in 1898 to try and create a bacteriological laboratory for London's public health officer were strongly supported by the Society.¹⁰⁷

The details of existing facilities for bacteriological examinations available to M.O.H.s in 1898 revealed a growing need. Dr. D. S. Davies the M.O.H. for Bristol conducted a survey of the facilities available to M.O.H.s for bacteriological examinations during 1898.¹⁰⁸ His own department had since incorporated

diphtheria culture work and Widal testing in the conformation of Enteric fever as a regular aspect of their work. The bacteriological examination facility was provided by a small laboratory set up by himself and his assistant, Dr. Heaven, in 1894 with financial assistance of the Sanitary Committee of his local authority. The work completed since 1894 had been of enormous value in the reduction of diphtheria spread through positive identification and enteric fever incidence since that time.¹⁰⁹

Davies noted that in London eighteen districts were using the existing facilities at the Jenner Institute, in 1898. The service provided for examination of specimens cost 2s. 6d. per case. Reginald Dudfield at Paddington was planning to set up his own laboratory in his district and to employ his own bacteriologist in his department. George Bate and his associates at Bethnal Green and Plumstead Vestries used the Clinical Research Association, Samuel Lovett arranged with the R.C.S.P. to have them undertake culture examinations for him at their laboratories, Guy's hospital served William Bond for the St. Olive's, Southwark district, and George Millson at Stoke Newington sent his examinations to the Bacteriological department at University College. At Lambeth, The Strand, The City, Hammersmith and Hackney the Authorities were setting up their own analyst's department employing a bacteriologist.¹¹⁰

In the provinces there were tales of facilities collapsing due to lack of funds, for example, in Leicester where the Medical Officer himself continued to complete examinations when possible, without a laboratory. The public health laboratory in Manchester was set up by Sheriden Delepine, professor of hygiene at Owens College.¹¹¹ The laboratory was of considerable significance because of the facility it offered to provincial districts for bacteriological analysis. Sheffield, Salford, Oldham and Manchester sanitary districts all used the laboratory on a regular basis throughout the year. Mason at University College Birmingham also performed a similar function for M.O.H.s in the surrounding areas. In Scotland, Professor Hamilton at Aberdeen University had been undertaking bacteriological work for the rural and urban boroughs in Aberdeen County since 1894. Arrangements were made with the city analyst in some districts such as in Bradford and Nottingham and there were a few districts where the M.O.H. himself undertook all bacteriological examination work, e.g. Portsmouth and Brighton. In University College Liverpool, Professor Boyce established a Bacteriological Society and Glamorgan County fitted out its own lab in 1898 and employed a bacteriologist.¹¹²

The effect of the "advanced science", as Joseph Ewart had described the development in bacteriology

upon preventive medicine was therefore both theoretical and practical. The full implication of scientific developments was an emergent expertise based on a new technology. As Newsholme had pointed out, however, the expertise was directed at wider goals, such as achieving social efficiency, and required an expansion of public administration far beyond existing limits. The fundamental inhibition to expansion, in the view of the editorials of Public Health, was "Local Misgovernment".¹¹³ The "property qualification", which Ewart had referred to, was equally held responsible by the Society of Medical Officers of Health for making it impossible to secure "the correct class of men for councillors". Since it was impossible to persuade the general electorate of constituencies to,

take an active and continued interest in the elections the result is that a group of individuals, among whom the jerry builder and the house-farmer are only too conspicuous, get the whole control of the district into their hands.¹¹⁴

Consequently while the watchword of local government was "progress" the reality was "retrogressive". While appearing to support a highly democratic ideal, the system of local government had become in practice "oligarchic in the extreme".¹¹⁵

The prevention of the health of the community was far too important an issue for the emergent preventive expertise, to allow it to be limited by

Parish politics. It was, therefore, in terms of the preventive ideal, an issue of national government. Recognition of this aim could be found amongst the most obscure membership of the Society of Medical Officers of Health. In a paper, reproduced in Public Health in 1899 which was read to the Border Counties branch of the B.M.A. by John Highet, (M.O.H. Workington), the need for a department of public health was outlined. Highet's point was that Farquharson's Bill before Parliament that year to provide fixity of tenure for M.O.H.s was not the way to secure effective administration of preventive medicine. The elimination of direct control over the appointment of the M.O.H. by the local authority was insufficient to meet the need for independence in preventive administration. What was required to correct the current inadequate administration was a separate government department with its own minister to which the M.O.H. was alone responsible.¹¹⁶

The Society itself was criticised by individual members for not pursuing such aims with sufficient vigour and aggressiveness. Campbell-Munro speaking at the annual Provincial Congress of the Society in Edinburgh, July 1898, questioned the existing record of achievement.

Have the numbers, resources and forces of the Society been organized in such a way as to influence outside opinion, to influence the legislature ... I am afraid the question must be answered in the negative. Is not the time ripe for a new department? ¹¹⁷

The M.O.H..for Pudsey, Dr. W. L. Hunter, later that year insisted to the Yorkshire branch that the tactics of subtlety and tactful persuasion used by individual officers dealing with local authorities should not be reproduced in the actions of the Society. As Highet had pointed out, no trades union would act in such a way and justify it.¹¹⁸

Disillusionment with the capacity of the Society to achieve the collective aims of the preventive ideal had led some members to toy with the idea of amalgamation with other preventive institutions. Edward Seaton devoted his presidential address to this issue entirely during 1898.¹¹⁹ Seaton included in his proposals those societies "whose transactions concern the foundations of our systems of administration". Amongst these he listed the Epidemiological Society, the British Institute of Preventive Medicine, the Sanitary Institute, the Royal Institute of Public Health and the Jenner Society. From the point of view of professional M.O.H.s the interaction of these institutions constituted the scientific foundation to preventive practice, as far as Seaton was concerned.

The separate activities of these organisations, however, spread the resources of M.O.H.s to breaking point. Seaton suggested that the M.O.H. was at one time both a local government official, needing contact

with other professions represented therein; architects, engineers, chemists, geologists, etc; and a medical man but without sufficient representation amidst the medical profession itself. The public health section of the annual B.M.A. congress did not provide sufficient support for the requirements of the M.O.H.'s professional interests. Thus he recommended that the S.M.O.H.

which should be the most influential in connection with public health administration, to do the utmost to bring about amalgamation of the various associations connected with the public health. ¹²⁰

The advantages to amalgamation of this kind would be two-fold. A united voice of "medical men engaged in public health work of various kinds" would increase their power to achieve the political aims of preventive medicine which they all shared. He cited three areas as obvious cases for united action. Firstly, the relationship of local verses national systems of administration. After a quarter of a century of controversy Seaton believed that united representation of the aims of a preventive medical lobby could bring about a definite policy and an acceptable conclusion. Secondly, the question of medical education with regard to the curriculum required for preparation for the D.P.H. could be properly represented. Stronger representation of preventive medicine on the General Medical Council would be invaluable for this and many other issues.

Lastly, the position of Sanitary Inspectors in the administration of the district and the determination of who should direct their training and examination would cease to be such a "vexed" issue.¹²¹

Apart from political achievements, an amalgamation of preventive societies could also promote greater scientific development, not only in terms of research but also in practical application in the district. Seaton believed that the union of experts working in different capacities within an administrative district would make research a structural facet of a department. The chemical analysis of water and gas could be integrated with bacteriological examination of food, milk and diagnostic swabs if the public analyst, the bacteriologist and the M.O.H. belonged to one professional society, Seaton suggested that isolated analysis would be replaced by systematic research. This was the only way to increase the scientific certainty of preventive administration.

On any other basis than this reports derived from laboratory analysis only may even tend to give a false, and therefore misleading sense of security.¹²²

Mergers between preventive medical societies did subsequently take place; none of them, however, involved the Society of Medical Officers of Health.

At the 1912 Fifteenth International Congress of Hygiene and Demography, Sir George Nuttall announced that "this is the age of preventive medicine."¹²³ He was emphatic that it was now widely acknowledged that preventing disease in the community was more important than curing it in the individual.¹²⁴ From the interaction of the preventive community it appeared that the age of which Nuttall referred to began when the sanitary era withered away. The sanitary era, however, was not overwhelmed by what Newsholme termed empirical medicine. It was the rational, scientific analysis of the disease process that replaced the sanitary control of the environment with the preventive medical preservation of health.

The rational theory of the disease process was a source of independent theoretical authenticity for prevention. The comprehensive character of prevention on a rational basis required, however, as Newsholme pointed out, an expansion of administration. The need for expansion was most clearly expressed by the preventive community in its demand for a ministerial department of health. Edward Seaton had referred to the need for amalgamation in order to co-ordinate preventive activities. George Nuttall cited the same need for co-ordination to justify a national system of health administration by a central government department. There were five government departments responsible for the civil

health services after the 1911 Insurance Acts. Nuttall considered this plurality to be the most severe obstacle to efficiency. The only remedy lay, he suggested, in a department of health with its own minister and a national service of officers equipped with the best possible training, unfettered by the discriminations of local authorities. This was the preventive ideal as he saw it, for the future.

The fundamental doctrine that the state is responsible for the health of its citizens has never yet been fully recognized by any nation ... but there can be no doubt that this doctrine will before long be universally recognized and acted upon. 125

NOTES.

- 1: Transactions of the National Association for the Promotion of Social Science. Vol. I, 1856-1857.
- 2: This was a joint committee set up with the National Association for the Promotion of Social Science to make a critical examination of the work of the Royal Sanitary Commission. Earlier a committee had been instituted by Arthur Ransome at the Annual meeting of the B.M.A. during 1865, to encourage the registration of disease. Later a special committee was created, in 1873, to deal with the conditions of employment and qualification of officers working in the public health service. A great deal of work was done within the Association, however, on public health legislation by its Parliamentary Bills Committee, from 1863. See, E.M. Little, History of the British Medical Association 1832-1932, (London, B.M.A., 1933), pp.117-140; for further histories of the B.M.A. see: Paul Vaughan, Doctors Commons. A Short History of the British Medical Association (London, Heinemann, 1959); E.Grey-Turner and F.M. Sutherland, History of the British Medical Association, Vol. I, 1832-1931, Vol. II, 1932-1981, (London, B.M.A. 1982).
- 3: Transactions of the Epidemiological Society of London, Vol. I, 1855, pp.1-4.
- 4: Ibid.
- 5: Ibid.
- 6: "Objects of the Society." originally published in the Sanitary Review 1850, reprinted in the Transactions of the Epidemiological Society, Vol. I, 1855.
- 7: Ibid.
- 8: Epidemiological Society, "Report of Council" in Transactions, op.cit. Vol. I, 1855, pp.4-17
- 9: Transactions of the Epidemiological Society New Series 1889-1890, Vol. IX, "List of Members", pp.ii-vii.
- 10: See Transactions op.cit. Vols.I- XVII, 1855-1906.
- 11: Ibid. Transactions, Vol. I, pp.1-4
- 12: Buchanan, Murphey and Corfield were also presidents of the S.M.O.H.; Crawford, J.Lane-Notter and Corfield were presidents of the Sanitary Institute; Fayrer founded the Royal Institute of Public Health; William Jenner set up the Parkes Museum; and Patrick Manson founded the London School of Hygiene and Tropical Medicine. John Tatham became the Registrar General.

- 13: Transactions of the Epidemiological Society, New Series, Vol. IX, 1889-1890, "List of members", pp. ii-vii.
- 14: Ibid.
- 15: The Lancet, 1876, Vol. II, July 1st.
- 16: Transactions of the National Association for the Promotion of Social Science, 1876, Vol. , "Liverpool Congress, Section III, Miscellaneous Discussions", p.535
- 17: Louis Coultman Parkes, Jubilee Retrospect of the Royal Sanitary Institute 1876-1926 (London, published by the Institute itself, 1926) pp. 2
- 18: Ibid.
- 19: Ibid.
- 20: John Charles Lory Marsh, (1823-1888), see, Centenary Supplement of the Royal Society for the Promotion of Health Journal, 1976, Vol. 96, (5), p.3
- 21: L.C.Parkes, op.cit. p.3 .
- 22: Ibid.p.6
- 23: Benjamin Ward Richardson, The Future of Sanitary Science (London, Macmillan, 1877)pp.1-47.
- 24: Parkes, op.cit. p.7
- 25: Edgar White Wallis, (retired as secretary in 1928), see Centenary Supplement, op.cit., p.3.
- 26: Edmund Alexander Parkes (1819-1876), D.N.B., Vol. XV, pp.294 - 296.

- 27: L.C. Parkes, op.cit. pp.12-13
- 28: Sir Douglas Galton, (1822-1899), D.N.B. Vol. VI,
p. 475
- 29: Francois De Chaumont, (1833-1888), Lancet, 1888,
Vol. I, pp.854-855
- 30: Sir Thomas Crawford, (1824-1895), The Lancet, Vol. II,
1895, pp.1013-4; and Journal of the Sanitary Institute,
1895-1896, Vol. XV, pp. 523-525.
- 31: Parkes, op.cit. p.17
- 32: Ibid. p.21
- 33: Alfred John Carpenter (1825-1892), D.N.B., Vol.
XXII, pp. 393-394.
- 34: Parkes op.cit. pp.26-27.
- 35: Surgeon General W.R. Cornish, "The College of
State Medicine", Public Health Organ of the Seventh
Congress of Hygiene and Demography, 1891, (London,
S.M.O.H. 1891) ,pp.27.
- 36: Ibid.
- 37: Surgeon General William Robert Cornish, (1828-1897), The
Lancet, 1897, Vol. II, p. 1154
- 38: Sir Joseph Fayrer (1824-1907), D.N.B. Ist Suplement,
pp. 15-17.
- 39: Harriot Chick et al, War on Disease, A History of
the Lister Institute, (London, André Deutsch, 1971),
pp.33-34.

- 40: Ibid.
- 41: Ibid. pp.42-62
- 42: Sir William Robert Smith, (1850-1932), Lancet, 1932, Vol. I, p.697.
- 43: H.H. Gerrans, The Royal Institute of Public Health and Hygiene, A Review of its Work and Developments, Pamphlet, London School of Hygiene and Tropical Medicine (London 1950), SAS 43, 5785. reprinted from Medical Press, March 22, 1950, p.223.
- 44: Ibid.
- 45: Ibid.
- 46: John Clough Thresh, (1850-1932), Lancet, 1932, Vol. I, pp.1177-1178.
- 47: A. Seymour Harding, The Royal Institute of Public Health and Hygiene (London, 1944), pp. 3-4
- 48: Edwin Chadwick, "Progress of Sanitation: Preventive as Compared with that of Curative Science." in Transactions of the National Association for the Promotion of Social Science 1881, pp. 625-649
- 49: Ibid.p.628
- 50: Ibid.p.648
- 51: Ibid. p. 649

- 52: Sir Joseph Ewart, (1831-1906), Transactions of the Epidemiology Society, Vol. XXV, 1905-1906, pp.307-308
- 53: Joseph Ewart, "Inaugural Address" Transactions of the Epidemiological Society of London. N.S. Vol. X, 1890-1891, pp.1-21
- 54: Ibid. p. 1
- 55: Ibid. p. 2
- 56: Ibid. p. 3
- 57: Ibid. pp.9-21
- 58: Joseph Ewart, "Presidential Address" in Transactions of the Epidemiological Society of London, N.S. 1891-1892, Vol. XI, pp. 1-26
- 59: Ibid. pp.6-25
- 60: Edward Prince of Wales, "Opening Address" in Public Health, Organ of the Congress of Hygiene and Demography 1891 August 11th, p.36.
- 61: Douglas Galton, "Discussion on A.Wynter Blyth's Paper at a Sessional Meeting, 11th March 1891" in Transactions of the Sanitary Institute 1890-1891, Vol. XII, pp.44-45
- 62: A. Wynter Blyth, "The Prevention of Infectious Disease" Transactions of the Sanitary Institute 1890-1891, Vol. XII, pp. 39-44
- 63: Charles E. Paget, "Some Imperfections of Public Health Administration", in Transactions of the Sanitary Institute, 1894-1895, Vol. XV, pp.386-403.

- 64: Ibid., p.389
- 65: Ibid., pp.390-397
- 66: Thomas Crawford, "The Position of Medical Officers of Health in Regard to the Administration and Working of the Infectious Diseases Notification Act." in the Journal of the Sanitary Institute, 1895-1896, Vol. XVI, pp. 353-361.
- 67: Ibid.
- 68: Ibid.,p.356
- 69: Ibid.
- 70: Ibid. p.358
- 71: Ibid. "Response to Galton by Sykes and Hill". pp. 359- 361.
- 72: Editorial, "A New Years Greeting", Journal of the Royal Institute of Public Health, 1908, Vol. XVI, p.45.
- 73: James Barr (1849-1938), Lancet, 1938, Vol.II, pp.1261-1262.
- 74: James Barr, "Preventive Medicine, The Medicine of the Future." in the Journal of the Royal Institute of Public Health , 1907, Vol. XV, pp.515-530
- 75: For discussion of the report on physical deterioration see, Bently B. Gilbert, "Health Politics: The British Physical Deterioration Report of 1904", in Bulletin of the History of Medicine, 1965, Vol. 39, pp.143-153.
- 76: Barr, op.cit. p.516
- 77: Ibid.,p.517

- 78: Ibid.
- 79: Ibid. pp.518-530; For discussion of the role of eugenic and racial theories in the pursuit of . . . national efficiency during this period see, G.R. Searle, The Quest for National Efficiency. A Study in British Politics and Political Thought, 1899-1914 (Oxford, Basil Blackwell, 1971), especially pp.54-106.
- 80: Editorial, Journal of the Royal Institute of Public Health, 1911, Vol. XIX, pp. 46-50
- 81: For discussion of the role which Unwin, Geddes et al. played in the development of town planning during this period see, A. Sutcliffe (ed) The Rise of Modern Urban Planning 1800-1914 Vols.I-III (London, Mansell, 1980); P. Boardman, Patrick Geddes. Biologist, Town Planner, Re-educator, Peace Warrior, 1854-1932 (London, Routledge Kegan and Paul, 1978)
- 82: Henry Vivian, "Co-partnership in Housing in its Health Relationship." in The Journal of the Royal Institute of Public Health, 1909, Vol. XVII, pp. 10-21
- 83: The schools were selected from both urban and rural areas and they were described in the table of results by the Edinburgh Charity Society as: schools from poor districts, (categories I and 3A); public schools, (category 2), schools from prosperous districts (category 4)

- 84: Newman's Table was reproduced from his Annual Report for Finsbury, 1906.
- 85: Robert Caldwell(1859-1919), see, A.Peterkin and W.Johnston, Commissioned Officers in the Medical Services of the British Army, 1660-1960 (London, Wellcome Institute, 1968), Vol. I, p.1885; B.M.J.1919,I,p53
- 86: Robert Caldwell, "Economic Aspects of Tuberculosis." in the Journal of the Royal Institute of Public Health, 1909, Vol. XVII, pp.151-157; p.157
- 87: Ibid. p.156
- 88: Ibid. p.157
- 89: Ibid. p. 155
- 90: Ewart G.Gulpin, "Garden Cities as A Solution of the Housing Problem." in the Journal of the Institute of Public Health , 1909, Vol. XVII, pp. 99-110;p101
- 91: Barry Parker and Raymond Unwin, "Town Planning and Housing", in Journal of the Royal Institute of Public Health, 1909, Vol. XVII, pp.24-33
- 92: Ibid. p. 25
- 93: Arthur Newsholme, "Some Conditions of Social Efficiency in Relation to Local Administration." in the Journal of the Royal Institute of Public Health , 1910, Vol. XVIII , pp.529-550.
- 94: Ibid. p.531
- 95: Ibid.p. 536
- 96: Ibid.p. 532
- 97: Ibid. p. 536
- 98: Ibid.p. 539

- 99: Ibid.pp.545-549
- 100: Originally this section was entitled simply, "Bacteriology", and from 1898 onward it was called, "Analytical Notes".
- 101: Edgar Crookshank, "A History of the Germ Theory of Disease." in Public Health, 1888-1889, Vol. I, pp. 16-19 and pp.53-56.
- 102: Alan Macfadyen, "Application of Bacteriology to the Prevention and Treatment of Disease." Public Health, 1898-1899, Vol. XI, pp. 126-129.
- 103: Ibid. p.128
- 104: Ibid.p. 129
- 105: Walter Pakes, "The Application of Bacteriology to Public Health". Public Health, 1899-1900, Vol.XII, pp. 385-437
- 106: E.G. Annis, "Serum Therapy in Relation to Public Health." in Public Health, 1899-1900, Vol XII, pp.510-520.
- 107: John F. J. Sykes, "Practical Points in Public Health Administration", in Public Health, 1898-1899, Vol. XI, pp.187-192
- 108: D.S. Davies "Bacteriology in Public Health Work." in Public Health, 1898-1899, Vol.XI, pp. 602-611.
- 109: Ibid. pp.602-606
- 110: Ibid. pp.607-608.

- 111: Sheridan Delepine, (1855-1921), B.M.A. Book of Manchester and Salford, 1929, pp.66; Lancet, 1921, Vol. II, p.1080.
- 112: Davies, op.cit. 609-611
- 113: Editorial, "Local Misgovernment" in Public Health, 1899-1900, Vol. XII, pp.61-63
- 114: Ibid.
- 115: Ibid.
- 116: John Highet, "The Need for a State Department of Public Health." in Public Health, 1899-1900, Vol. XII, pp. 851-858.
- 117: A.Cambell Munro, "Presidential Address to the Congress", in Public Health, 1898-1899, Vol. XI pp.5-24.
- 118: W.L. Hunter, "A Few Public Health Possibilities", Public Health, 1898-1899, Vol. XI, pp. 415-419
- 119: Edward Seaton, "Medical Societies and the Public Health Service." in Public Health, 1897-1898, Vol. X, pp. 36-39
- 120: Ibid. p. 36
- 121: Ibid. p. 37
- 122: Ibid. p. 38
- 123: George Nuttall, "The Training and Status of Public Health Officers in the United Kingdom." Pamphlet of the London School of Hygiene and Tropical Medicine, SAS, reprinted from, The Transactions of the Fifteenth International Congress of Hygiene and Demography,

123: Washington D.C., September 23rd-28th, 1912. pp. 1-20.

124: Ibid.

125: Ibid. p. I.

HYGIENE : TECHNOLOGY OF PREVENTION.

Hygiene has been the art of cultivating a healthy body and mind since antiquity. Hygeia the daughter of the classical God of medicine Aesculapius, iconographically represented this culture of health throughout the ages.¹ The cult of hygiene was a pre-Hippocratic tradition, of Semitic origin.² Hippocrates had however summarised the articles of health which became incorporated into the Hellenistic tradition of the laws of life.³ The culture of hygiene was further elaborated through the doctrines of Galen, to whom the phrase, "six things non-natural" has been attributed, but not without some controversy.⁴ Even if the origin of the term "non-naturals" is in doubt, the doctrine of the Galenic code is not, and as has been demonstrated by Niebyl, was used extensively to organise the Hippocratic tradition into a practical regimen.⁵

The art of preserving health underwent a fundamental change in the modern world. This transition began when the "laws of life", redefined as physiology, became a scientific study and the laws of organic decay, morbidity and death were translated through the pursuit of a scientific explanation of disease. By the end of the nineteenth century, health was no longer defined only in terms of the harmonious functions of the body and its organs, but more specifically measured against disorderly metabolism of tissues and in the chemistry of cellular activity. The changing context of explanations



Imagie d' Higia figliuola d' Esculapio co'l Cane, & Serpe simboli di suo Padre, significanti la diligenza del buon Medico, & gli effetti, che da questa ne risultano.

of disease meant that prevention also was in a state of conceptual and practical flux during this period. It is this relationship which will be explored here.

In 1902, Arthur Newsholme asserted that the terms hygiene and preventive medicine could be considered to be synonymous .

Inasmuch as the preservation of health involves the prevention of disease, hygiene the science of health is called preventive medicine.⁶

Progress in the control of communicable diseases led Newsholme to this view, but it was not held by all of his contemporary hygienists. The boundaries of hygiene still extended beyond the practice of prevention for William Sedgwick for example. He insisted that until the constitutional diseases and an understanding of the "conduct of ordinary life" had been placed upon "foundations equally sure, simple and scientific", hygiene would remain "an end to be sought for than as something possessed." ⁷

Despite this philological and perhaps even philosophical dispute, there was, throughout the latter half of the 19th-century, a discrete area of knowledge and practical method of prevention which was termed, and taught as hygiene. One resolution to the dispute could be, as Ackerknecht has pointed out, that from 1848 a new "public hygiene" was founded in England.⁸ This however begs a question. The instruction texts in hygiene were not predicated by the term "public" in their title, nor indeed was the scope of the topic . It is .

to these texts and the issues which they raise concerning the science of health as preventive medicine, which we now turn.

Environment and Disease.

In the Dictionary of National Biography, Edmund Parkes is described as the "founder of the science of modern hygiene".⁹ Although it has been claimed that this is something of an overstatement,¹⁰ he was certainly the founder of the modern hygiene text-book in England. The Manual of Practical Hygiene, first published in 1864, was written specifically for use as an instruction text. It was aimed at students studying methods of disease prevention in preparation for appointment to a post bearing that responsibility either in a military or civil context.¹¹ Although Parkes was the first English author of a hygiene text-book, his work was not the first available to students in England. The development of "hygiene publique" in France dated from the end of the Napoleonic wars.¹² Much was achieved in the medical faculty in Paris under the direction of Jean Noel Hallé when he took up the chair of hygiene in 1815. The theses of the faculté subsequently included the work of individuals such as Villermé and Parent Duchatelet. Michel Lèvy was also a student of Hallé's and produced what Ackerknecht has called "the most systematic" and best known book of the period up to 1848.¹³ Lèvy's Traité d'Hygiene had certainly made a sufficient impact on its English audience to have some of them recommend it, together with Parkes' Manual, to the G.M.C. in 1868 as a standard

text for any potential hygiene diploma.¹⁴ The Traité, first published in 1844, contained two books; the first dealing only with personal hygiene, regimen, cultivation of personal health etc; the second on public hygiene.¹⁵ The topic of civil hygiene was divided by Lèvy into separate chapters on water, air, nutrition, removal of refuse and excreta and the prevention of "common diseases". He also included a chapter entitled "Percepta", in which he dealt with intellectual and moral culture, marriage, education and religion.¹⁶ Public hygiene was represented by Lèvy as the environment of physical and social determinants of health. Throughout the Traité, Lèvy maintained a theory of disease which was most clearly articulated in his discussion of infectious, contagious, epidemic and endemic diseases. He described infection as, "the mode of propagation of certain diseases caused by the action exercised on man of contaminated air."¹⁷ The sources of infection were, he suggested, deleterious emanations and pathological agents with special aptitude for specific influences.¹⁸ He also admitted however that,

Le principe infectieux a été appelé effluvé quand les marais sont le foyer qui le dégage, miasme quand il s'échappe de l'organisme vivant, sain ou malade, ou d'une substance animale en putréfaction.¹⁹

Contagion, he believed was a communicable poison transmitted from individual to individual.²⁰ The development of epidemic and endemic diseases was related to the combination of modes of propagation, together with the constitutional variability of a locality.²¹ While retaining a conception of contagious

propagation therefore Lèvy still placed a far greater emphasis on the environmental determinants of disease including that of miasmatic influence. He declared himself to be fundamentally a disciple of Thomas Sydenham in this view, who, Lèvy believed, had achieved the best understanding of epidemic diseases.²²

Whether or not Edmund Parkes had been influenced by Lèvy's Traité it is difficult to estimate. There were however some similarities between the format of Lèvy's second volume and the ordering of material in Parkes' Manual. Parkes did not share the view, which was evident in Lèvy's text, that the subject of hygiene was divided into a clear dichotomy of private and public. His Manual discussed all those topics covered in Lèvy's work, under the title of public hygiene but did not attempt to deal with the subject of regimen and personal hygiene. Parkes' did not see the two as separate disciplines, so much as one being absorbed by the other.' In the introduction to the Manual, he outlined what he felt the scope of the subject to have been historically and what, in his view, it had evolved into. To begin with Parkes saw something of a divine mission in the ideal of a "perfect system of hygiene"; one which would combine the skills of a physician, schoolmaster and priest to train the body, mind and soul to achieve a perfect, balanced order. Then it might be possible, he suggested,

to see the human being in his perfect beauty, as Providence perhaps intended him to; in the harmonious proportions and complete balance of all parts, in which he came out of his Makers' hands, in whose divine image, we are told, he was in the beginning made. 23

The divine mission had a decisive sequence of priorities to it however. This was that the preservation of health, the pursuit of perfect physiological balance, could only be achieved firstly through the prevention of disease. The former was entirely dependent upon the latter and thus, he asserted, hygiene was in fact, "an application of etiology, and etiology is the philosophy of medicine; while in its turn the very foundations and basis of etiology is an accurate diagnosis of disease." ²⁴

Parkes received a major opportunity to develop his view of the science of hygiene as the prevention of disease when the Royal Commission appointed in 1857 to inquire into the sanitary condition of the Army prepared a new edition of the "Medical Regulations" in 1859.²⁵ The Commission had also recommended that an Army Medical School be established in order that the army surgeon might be trained for duties as a medical officer. It was then that Parkes was appointed as Professor of Hygiene at the School, established first at Chatham and later at Netley, and was also asked by his friend Lord Grey, to provide a text-book of instruction. Although intended primarily for the military, he believed that the Manual went beyond its brief and discussed the principles of hygiene comprehensively enough for it to be called a general work.²⁶

By 1873, Parkes claimed that the text had become so widely used by non-military personnel that, "in compliance with requests made to me that I should put this edition

in a form adapted for Civil Medical Officers of Health, I have not only re-written many of the chapters as well as carefully revised all, but I have transferred the purely military part to the second book."²⁷ Despite claims of major revision the structure of the Manual did not change fundamentally in the 1873 edition from that of the previous three editions. Parkes simply called the first thirteen chapters on general hygiene "Book I" and the latter chapters on the life of the soldier, "Book II". There were however important changes made in the text, close analysis of which demonstrated the development and revisions in Parkes' thinking toward the end of his life.

In a similar way to Lèvy, Parkes' first major topics in the Manual were air, ventilation, food etc. His discussion of "water" covered quantity of supply, collection, storage, distribution, action on lead pipes, and quality of composition, character and classification of drinking water, impurities, purification, effects of impure supply and examination for hygienic purposes.²⁸ He claimed that insufficient supply of water was directly correlated with an increase in disease through deterioration of cleanliness of the population, their homes and their person, plus the inability to obtain an effective sewage system. The consequences of impurity were, he believed, less easy to determine. In 1873 he suggested that, "owing probably to the difficulty of making analyses of waters, the exact connection between impure water and disease does not yet stand on precise an experimental basis as

might be wished." ²⁹ Controversy reigned. Parent-Duchatelet, for example, had demonstrated the harmful effects of some chemical impurities; calcium and magnesium. According to Parkes however, these researches were based, "on that most fallacious of all evidence, a general impression, without a careful collection of facts." ³⁰

Evidence of the relationship of "suspended animal matters," especially those which were readily oxidisable, to disease was, he believed, more conclusive. Diarrhoea, dysentery, malarious fevers, typhoid, cholera, yellow fever and goitre were all due either in principle or in part to such contaminations of water. Diarrhoea and dysentery were produced, he believed, through dissolved animal matter. Malaria resulted not only from marshy air, but also the water from such soil contributed to the cause of intermittent fevers. In order to support all such assertions, Parkes quoted endless numbers of studies conducted at, and correlated between, investigations of particular outbreaks, in individual localities. In the case of marsh fevers he provided more evidence than usual in order to support his case for water contamination. The generally held view was that intermittent fever was the result solely of vaporous impurities. ³¹

The relationship of typhoid fever to the presence of typhoid stools was not clearly proven, in his view. He considered that Budd's work of 1859, was indecisive and having had "personal communications" with him, felt the

issue was still ambiguous.³² That typhoid was caused by impure water had overwhelmingly been demonstrated by Buchanan and Richard Thorne-Thorne,³³ but two questions still remained unanswered as far as Parkes was concerned: since typhoid was disseminated through the air also, then what proportion of the disease was disseminated through both media ; and if decomposing sewage was the exciting cause, was it determined by typhoid evacuations only?³⁴ As yet, he asserted, there were no clear answers; but in the case of cholera, he conceded that Snow's work was definitive.³⁵

There was no evidence, he concluded, to connect any of the remaining specific diseases with impurities in water. In the 1864 edition of the Manual, Parkes stated that there was no evidence either, that different kinds of infusoria, microzymes, algae or fungi were harmful to health. He was content to leave this passage unaltered throughout the subsequent editions of the book, even though its meaning became ambivalent.³⁶ The presence of infusoria was a useful tool however, he always maintained, for it could be used to indicate the level of inorganic impurity. Even in his 1873 edition he retained the sentence which stated that, "future research may bring out something important in this direction."³⁷

The effects of impurities in the air on health were more easily demonstrated, Parkes believed. However a qualification of this was that, "while the immense effect of impure air cannot be for a moment doubted, it is not always easy to assign to each impurity its definitive action." Classes of impurities were, apart from counterbalancing inorganic

gasses, various organic and inorganic suspended matters, ranging from dust and sand particles and the products of volcanoes to fungi and dried organic substances or amorphous matter. The latter had been linked to specific diseases. Parkes noted for example, that cholera in India had been linked to the dried particles of excreta, and it had been suggested that dried discharges of smallpox and scarlet fever acted in the same way. He remained sceptical about these assumptions. The nature of suspended matters in external and enclosed air varied and air vitiated by respiration altered their composition especially. The diseases produced by suspended matters were, therefore, the result of these complex processes which he believed were, as yet, understood very little.³⁹ He did admit that dead substances were strongly connected to some respiratory illnesses, such as bronchitis and asthma from the effluvia of grasses and hay fever, or summer catarrh, with the pollen from flowers.⁴⁰

Some development in Parkes' thinking was illustrated in his discussion of aërialborne infusoria in the 1869 edition of the Manual. The 1864 text contained only a short paragraph on the subject. In it he rejected what he believed were the totally insufficient theories of the fungoid etiology of epidemic diseases. He cited and dismissed the work of Salisbury of Ohio and Hallier's research, as prime examples of this misguided view⁴¹ of causation. In the 1869 text; Parkes had added .

a section on the "contagia" to this passage. He stated that for him the term contagia indicated, "the unknown causes of specific diseases." ⁴² It was clear, he thought, that specific diseases "reach the person" through the medium of air, even though some also travelled via water. The nature of the specific contagia, however, was for Parkes that of non-interchangeable poisons. For this reason he could not accept the biological theories of contagia which attributed the characteristics of living organisms to them. He illustrated this view in the 1869 text with a discussion of what he called, modern adaptations of the "old doctrine of formites." In particular, Parkes cited the work of Lionel Beale whose germ theory of disease considered the agency to be,

"inconceivably minute particles of living, or to use Dr. Beale's phrase, bioplastic matter, which is capable he believes of wonderfully rapid growth under proper conditions." ⁴³

Parkes remained emphatic that the specific poisons were chemical substances, subject to the laws of oxidation and dilution, in which lay the key to their prevention. ⁴⁴

His medical epistemology was more fully elaborated in his account of "some important and common diseases", which remained unaltered in both the 1864 and 1869 editions. Hygiene, founded on etiology, had made one great advance, Parkes believed, in establishing the "great principle of invariableness of causation." ⁴⁵ The laws which governed the cause and effect of the disease process, were as immutable as those of chemistry and astronomy; i.e. "like

causes always produce like effects". Belief in a common cause to a multiplicity of diseases, as had been assumed in the case of typhus and typhoid belonged, as he put it, to a past which "now seems incredible." The whole future of hygiene depended upon this "great principle" of specificity. As yet, hygiene was often generalised, imprecise and based upon the laws of chance. The great principle of specific causation would transform this, however, into an accurate, precise and scientific discipline.

In proportion as this great principle is still more applied, and as our means of diagnosis advance, and consequently, causes are more satisfactorily investigated methods of prevention will become obvious and precise. At present they are far from being so. In many cases they are founded on very imperfect observation, and very frequently all that can be done is to apply general sanitary rules, without attempting to determine what are the special preventive measures which each disease requires.⁴⁶

The pitfalls of generalised hygiene, was in Parkes view, that it worked on the basis of probability which might mean that, "in some cases we may be attacking only subsidiary or minor causes and may overlook entirely the effective causes, and may be fighting with shadows." ⁴⁷

Parkes believed that there were two stages in the explanation of disease causation. The first was the discovery of the exciting causes which were external to the victim, The second stage, was discovering the internal, predisposing causes within the body itself. Prevention, he asserted, was achieved through the management of both.

The investigation of the internal causes, which in some cases are necessary to the action of the external causes, is equally curious and intricate as that of the external causes, and in some respects it is even more obscure; but measures of prevention must deal⁴⁸ with them as well as with the external causes.

Parkes applied his own rules to an analysis of prevention of the principal diseases affecting soldiers. The exciting causes of paroxysmal fevers, were "presumed" to be putrefied or decomposing vegetable matter derived from moist and putrescent soil, producing a poison, which was carried into the body via the air or water. Internal causes of the disease varied in individuals and races, he claimed, but no-one knew why. Attacks of the disease did not "remove" it but rendered the individual more susceptible through "a peculiar condition, (of the nerves?) in which the disease can be brought on by causes such as cold, dietetic errors." Prevention was possible in two ways therefore for malaria. The exciting cause through the location of habitation being placed at a sufficiently high level of ground to be "above the source of the poison". Secondly, the predisposing cause reduced through the administration of antipyretics, especially quinine.⁴⁹

While acknowledging the correlation between the propagation of cholera and the presence of choleraic evacuations in water, Parkes still believed that as yet, "we have no certain clue to the origin of cholera, and in some respects the propagation of the disease is very enigmatical."⁵⁰ Its irregular epidemiology, rise and decline in certain localities, intermittent relationship

with climate and season made it still a mystery. Prevention had a number of strong probabilities about its causation to direct it, but one in particular, he thought, was the portablility of the poison from one place to another by victims of the disease. This together with the correlation of choleraic evacuations with its occurrence led Parkes to the conclusion that a combination of quarantine and disinfection of sewage systems were the most effective means of eliminating the exciting causes of the disease. He felt however that the predisposing causes of cholera were completely indeterminable, since the disease attacked both those with robust and feeble health indiscriminately.⁵¹

Throughout the Manual, up to chapter XIII there was a clear exposition of Parkes' theory of disease. His view of environmental causes of epidemic disease was based upon a chemical model of epidemic constitution. Specific diseases were caused by specific poisons whose epidemic propagation was dependent upon the condition of the atmosphere, water, food supply in a locality and the portability of the disease. The chemical agents of disease could be thus transmitted either through contact between the sick and healthy or through contact with the poisonous contaminations of the sick; i.e dissolved faecal matter in drinking water, or minute particles of skin shed from victims of scarlet fever for example. The nature of the agency was always referred to by Parkes as a specific poison using an

analagous explanation of vegetable putrefaction with regard to its action. In chapter two of the 1864 edition, there was no discussion of the effects of contagia in impure air.⁵² It was added in the 1869 edition but only to reaffirm the chemical against the biological explanation of the disease process.⁵³

In the 1873 edition of the Manual, the fourth and last ever produced by Parkes himself, a new chapter was added on disinfection. In this, the whole chemical basis to his disease theory came under critical review. He began the chapter with a completely different discussion of contagia. He justified a lengthy exposition of the competing theories by virtue of the fact that the term disinfection had come to possess many interpretations. He intended to use it to refer only however to those procedures which were used in the specific elimination of contagious diseases. The term had been used, Parkes pointed out, to denote a general agent for purifying air or to describe any substance which could restrain putrefactions. The sense in which he wished to use it however was to define only those substances which could "prevent infectious diseases from spreading by destroying their specific poisons."⁵⁴ The idea of destroying disease by eliminating its agents was an ancient one, attempted in various forms through fire and fumigations. In order for disinfection to amount to any more than a shot in the dark, Parkes felt, that it was necessary to know the nature of contagion, the

media through which it spread and the effects produced upon it by various chemical and heating methods.

These issues were the object of eager inquiry at that time, Parkes noted. He identified three lines of research which made up the current controversy as he understood it to be. There was firstly, the work of Beale, attempting to derive a biological theory of poisons, attributing contagia to particles of living protoplasm which were generated within the body but capable of sustaining life and multiplication outside the organism.⁵⁵ Secondly there was the research into the fungoid nature of contagia. For the first time Parkes identified a third area of speculation; the possibility that the agents were minute animal organisms which were already known, but previously considered to be harmless, namely "Bacteria, Zoogloea, Microzymes, Vibrios and Monads."⁵⁶

Parkes retained his dismissive view of the fungoid theory but changed his opinion slightly about the work of Lionel Beale. His earlier scepticism had been replaced by a more open mind and he suggested that new "facts" had emerged favouring the notion that bioplastic cells were capable of independent life.

That is that the independent life ascribed to these particles of bioplasm is no assumption, since we are now aware that many of the small animal cells or bioplastic molecules are virtually independent organisms, having movements and apparently searching for food, growing and dying,⁵⁷

The main objection which he still maintained against Beale's work however was that animals which were generated

only within the body would not sustain life with any prolonged strength outside it . This was not commensurate with what was known of contagia, for as Parkes pointed out, the virulence of contagia survived for considerable periods in different media.⁵⁸

The only previous reference to microscopic living creatures and disease dissemination in 'the 1864' and 1869 Manual had been in instructions for water analysis for M.O.H.s.⁵⁹ In 1873 however Parkes acknowledged that a new status had been attributed to them in the process of disease causation. He stated that since Lister and Klebs' work it was plain that these creatures played a part in the production of septicaemia. Parkes was also satisfied that bacteria had been demonstrated to be connected with typhoid fever by Coze and Feltz. He accepted that Ferdinand Cohn's work indicated that the glistening particles of the lymph were probably bacteria. Similar achievements had been made he believed in investigations of intestinal diseases of the mucous membrane, the uterus, kidneys and heart. Parkes maintained however that the part, if any, which they played in the production of many epidemic diseases was not yet proven.

In cholera, Lewis and Cunningham have failed, in spite of the most persevering research, to find Bacteria (or fungi) in the discharges or blood of cholera.⁶⁰

The reasons for the popularity of the bacterial theory were the very issues which led Parkes to disregard it. They were so widely spread, for example, their powers of growth and division were so rapid, their food, phosphates and

starches were so plentiful and their tenacity so great,

that it is no wonder great consequence is now attached to them.... yet it is their very universality which is the strongest argument against the view that they constitute the contagia of any of the specific diseases and any one who considers the peculiar spread of the contagious diseases will admit the force of this objection.⁶¹

Parkes could not therefore subscribe entirely to the bacteriological theory but opted instead for a little known variation of the theme that bacteria were not contagia in themselves but the carriers of contagia. He cited no particular source for his views but outlined them in detail. He assumed that the plasma of bacteria was albuminoid and that although usually harmless their plasma might become altered under certain conditions rendering them poisonous in different specific ways. Bacteria for example feeding in the blood of a typhoid patient might itself become diseased and this would explain why recent researches had identified links between their presence and certain epidemic diseases.⁶²

A further dimension to the debate was that of the de novo origin of epidemic diseases. The discussion had widened to include both of the competing theories on fermentation and what Parkes called "Darwin's doctrine of pangenesis."⁶³ He believed that this additional debate only increased the "darkness" rather than spread new light on the subject. It seemed incredible to him that such a practical question as disinfection should suddenly be caught up "with some of the most subtle

and controverted questions of the day, but the important bearing which the acceptance of one or other of these views would have on the practice of disinfection is evident." ⁶⁴ If contagia were simply minute particles of bioplastic material in Beale's sense, then the task of disinfection was made simple since they would easily be destroyed either by heat or through very weak chemical agents which kill "all signs of vitality in animal cell molecules", Disinfection would then be of tremendous value to prevention. Fungi were equally easily destroyed, Parkes pointed out. However if contagia were bacteria, then Parkes believed, disinfection would be extremely difficult to achieve. Bacteroid substances had already proved themselves to be extremely stable and were not destroyed even by strong acids or caustic alkaloids, Sanderson had proved, Parkes noted, that they even survived boiling. ⁶⁵ Thus the question of the nature of contagia became a primary one for prevention, "especially so in a practical sense, viz that of the easy or difficult destruction of these agents." ⁶⁶

What then of Parkes theory of disease, its relationship to his concept of environmental propagation and his theory of hygiene as a science of prevention? It is necessary to point out that Edmund Parkes has been given an historical role by both Erwin Ackerknecht and Margaret Pelling as a "contingent-contagionist". The two historians however, attach a different meaning to this term according to their opposed arguments concerning

the relationship of disease theories to the development of the English public health movement from 1821 to 1867.⁶⁷ Ackerknecht suggests that contingent-contagionism was a centralist position between philosophies of contagion and anti-contagion which admitted the existence of contagious propagation as one of many factors in the production of epidemic disease. Contingent-contagionists were, he claims, practically allied to the anti-contagionists and that this was reflected in their support for the abolition of quarantines. Ackerknecht points out that even anti-contagionists, such as Charles Maclean and Southwood-Smith, did not deny the existence of contagion entirely, and accepted that syphilis, gonorrhea, smallpox, measles and itch were spread through contact. What distinguished their position most graphically however was their denial of any role for contagion in the three main diseases against which quarantines were directed, plague, yellow fever and cholera.⁶⁸

As Pelling has pointed out however, Edmund Parkes opposed the opposition to quarantine by the "official doctrine" of the General Board of Health in 1848.⁶⁹ When asked to complete a report on cholera for the General Board in 1848 by Chadwick, Parkes stated his views on non-interchangeable poisons clearly and supported the policy of quarantine openly. His report was never published by the Board, and its contents clashed significantly with the study completed the following year by Arnott, which was published as the

First Quarantine Report, 1849.⁷⁰ Throughout the Manual, quarantine was upheld as a major piece of practical prevention, especially against the portability of cholera.⁷¹

While these facts cannot be ignored, Ackerknecht would still point out that the contingent-contagionists were closer to the anti-contagionist position by virtue of the great emphasis which they placed on the environmental determinants of disease dissemination, and the lesser role they ascribed to spread through direct contact. It was for this reason, he suggests, that the

anti-contagionists, though castigating the center cheerfully for its inconsistencies, were well aware of this fundamental closeness of both tendencies.⁷²

Clearly both of these arguments by Ackerknecht and Pelling have forceful merit with regard to the work of Parkes. I do not propose to make a judgement however as which is the 'correct' interpretation of something which both of them have chosen to call contingent-contagionism, or to create yet a further term to describe Parkes' disease theory in particular. It is possible to explain the latter however through an understanding of the sources of its development. Edmund Parkes, like many of his French counterparts during the 1840s, including Michel Lèvy, was a military medical man. He also shared with Levy some intellectual influences on the development of his thought, particularly the work of Thomas Sydenham. Parkes' theory of disease was grounded on two clear principles: the nature of epidemic

constitutions and the specificity of poisons. The original exponent of constitutions, Thomas Sydenham had, as Temkin points out, left a legacy which the 19th-century sanitarians remained dependent upon up to 1850.⁷³ The supposition that changes in the environment of a locality could determine the epidemic rise of particular diseases was incorporated fully into the investigations of Southwood-Smith during 1838. Pelling has noted for example, that even before this Smith's use of the concept was first illustrated in his Treatise on Fever in 1830.⁷⁴ Although Smith used Sydenham's concept to justify fully his anti-contagionism, there was no incompatibility with contagion in its original derivation. In the 1668 edition of Sydenham's Methodus Curandi Febres, Propiis Observationibus Superstructa Londini, for example, Bates has noted, the morbid substances of disease could arise from the sick or dead bodies of disease victims and the atmosphere could become filled with contagion.⁷⁵ The spread of the disease, new cases, could result from the contagia in the atmosphere as much as if it had passed between individuals through direct contact. Sydenham's view was that contagia was controlled however through constitution which favoured rise and decline. Thus the plague for example might be virulent in a town during August and diminish by November. Constitutions were seasonal and varied from year to year. By the date of the Magnum Opus, in 1676, Bates has suggested that Sydenham had developed a theory of the specific nature

of constitutions which created particular environmental conditions in which particular groups of disease would flourish as epidemics. From the constitutional conditions it was possible to predict the epidemic constitutions of the autumn. In the same way that species of plants could be understood through the natural history of their life cycles, so too the historical observation of disease, i.e. disease histories, (in addition to case-histories of individuals) could predict their behaviour.⁷⁶

Sydenham founded the theory that like plants, there were specific species of disease, which could be described by their clinical characteristics.⁷⁷ The specificity of disease could only be realised however when all factors i.e. contagion, season and constitution came together in a causal nexus.⁷⁸

Sydenham's influence on Parkes was evident. Parkes also believed that an epidemic disease was produced by a causal nexus. He differed from Sydenham however, in that he believed disease species were actually specific poisons. The constitutional elements of the environment were the medium in which these poisons multiplied. After the manner of Jacob Henle he assumed that these poisons could be spread also through contact, between the sick and the healthy or, more importantly, through the diseased organic products of the sick: choleraic poisons contaminated water from the decomposition

of cholera evacuations in it, scales and dried pus from scarlet fever and small-pox victims carried poisonous material into the air. The environment of a locality, its epidemic constitution, determined the virulence of a disease according to the amount of poisonous material it contained. The constitution of a locality was not, as it had been for Southwood Smith, a generalised source of numerous infections. There could be no such thing for Parkes, as a common origin for more than one disease.⁷⁹ In his view an epidemic constitution was not the result of "certain hidden and inexplicable changes within the bowels of the earth" producing "deleterious emanations" or a common effluvia contaminating the atmosphere.⁸⁰ The environment was rendered disease ridden through organic impurities carrying disease poisons. It was not until the 1873 edition of the Manual that this fundamental theory appeared to be challenged in any way in Parkes' mind. Even while tottering on the verge of bacteriology however, he retained a chemical interpretation of the new, potential etiology.

The reason for giving such an elaborate exposition of Parkes' theory of the environment is not because the Dictionary of National Biography calls him the father of modern hygiene but rather because the Manual became the model text-book upon which many other English authors based their own publications. The table of contents of a great

majority of texts throughout the following forty years often appeared as simply a variation on Parkes original theme. Moreover, the actual content of his disease theory was occasionally imitated but never ignored by subsequent authors.

During the 1870s and 1880s there was a proliferation of books on collective and individual sanitary topics. A large manual on sanitary engineering by Baldwin Latham published in 1878, president of the society of Engineers was a guide for inspectors on the construction of sewage works and house drainage.⁸¹ A book on water analysis for naval and civil health officers, 1875, was written by J. D. Mac Donald, the Fleets Assistant Professor of Naval Hygiene at Netley.⁸² Alexander Wynter Blythe produced a Manual of Practical Chemistry for food analysis and detections of poisons, during 1879.⁸³ Little essays such as Henry J. Lanchester's Few Notes Upon the Means of Making a House Healthy and Comfortable, dealing with everything from drainage to fire escapes in 1873, were succeeded by large text books on the sanitation of habitations such as the Handbook of House Sanitation by Eardley F. Bailey-Denton, the son of Bailey-Denton who had worked with Parkes when the Military Medical School was first established at Chatham before it moved to Netley.⁸⁴ Douglas Galton's study on the sanitary construction of houses, hospitals, barracks and asylums was the most significant contribution to this literature.⁸⁵ Public drainage and sewage disposal were discussed, "with upwards of one hundred illustrations" by the

president of the Society of Medical Officers
 of Health, Francis Vacher in 1889.⁸⁶ A similar
 pictorial guide to these dangers to health had
 earlier been presented by T. Pridgin-Teale, surgeon
 to the General Infirmary at Leeds in 1872.⁸⁷ The
 definitive work on this subject however was the
 second edition of Corfield's book on the Treatment
and Utilization of Sewage, (which was the first
 edition to be published under his own name and
 not under that of the British Association for
 Advancement of Science who had commissioned it).
 It had preceded the others, being published in 1871,
 and was revised and enlarged in a third edition which
 was published with the assistance of Corfield's
 student, Louis Coultman Parkes, the nephew of
 Edmund Parkes.⁸⁸

There were many more texts on individual subjects
 than on the subject of Hygiene as a whole. In the
 same year as the fourth edition of the Manual was
 produced, however, there was another text published
 which became something of a standard work. George
 Wilson, later to be the M.O.H. for mid-Warwickshire
 and member of the Council of the S.M.O.H. but at this
 time still the M.O.H. of the Convict Prison at
 Portsmouth, published the first edition of his Handbook
of Hygiene in 1873.⁸⁹ His reason for writing the
 book he claimed was the need for a work of general
 reference for medical students, general practitioners
 and M.O.H.s, resulting from the recent 1872 Public Health

Act. It is difficult however to discover exactly what Wilson believed he was providing which could not already be found, and often in much fuller detail, in the Manual.

Wilson's Handbook, was arranged almost identically to Parkes' Manual, Chapters I through XII dealing with Air, Water, Ventilation, Warming, Drainage, Sewage removal, etc. In Chapter XIII on "Preventive Measures and Disinfection", Wilson provided a clear account of his underlying theory of disease causation. He had made direct references to etiology throughout the text, in the discussion of air for example, he suggested that in addition to the suspended matters described in Tyndall's work there were also to be found,

other organic vapours arising from the decomposition of vegetable and animal products which merit special attention as for example those contained in the air of marshes and sewers. 90

Wilson went on to state that the nature of poisons and suspended matters were not as yet determined. In his discussion of the germ theory of disease however he remained unconvinced of its validity. While accepting the existence of some diseases transmitted only through direct contact, he did not believe them to be of any great importance to prevention. He regarded syphilis for example, as largely beyond the scope of preventive medicine. The group of diseases which he considered to be the proper object of public hygiene were those

which he described as zymotic. He accepted that these were communicable through contact but he also believed that,

there are certain other influences obscurely called epidemic which appear to act as predisposing causes, or at all events to give increased energy to causes already in operation. 91

Wilson did qualify his notion of epidemic constitution.

such epidemic influence, however is merely the expression of the fact that we cannot always explain why it is that certain diseases should rage with terrible violence in a particular locality; or why the type of the disease should now be mild and now severe; or why again, a disease such as cholera, should be subject to periods of pandemic extension. 92

Despite many references to air vapours and epidemic influences it was clear that Wilson did not have a theory of "morbific matter" arising from movements of the geological structures of the earth or miasmatic emanations from decaying organic substances. On the issue of epidemics he remained open to persuasive arguments to explain their cause.

A far more definitive perspective was to be found in the Dictionary of Hygiene and Public Health published by Alexander Wynter Blyth in 1876 when he was still the public analyst and M.O.H. for the North Devon combination of districts, before he moved to the London district of Marylebone.⁹³ The work was a comprehensive reference book of great value to both students and practitioners. It had been inspired and modelled on the dictionary of hygiene written by

Ambrose Tardieu, but used a wide variety of source material in addition, including all the most up-to-date researches into etiology.

Taking the entries in the Dictionary for contagion, infection, epidemic and zymotic diseases together it was possible to piece together Blyth's theory of causation. The distinction between contagious and infectious disease he openly stated as nothing more than "one of words" since the terms had become synonymous in his view. The actual meaning of them was in each case "there is contact of the poisons but in one it is either volatile or capable of being wafted in a dry state, in another it is ⁹⁴fixed." He provided however a full account of the classification of contagious and infectious diseases which he considered should be the basis of public hygiene. In Blyth's view these two categories should have replaced the term zymotic disease. The latter term only depicted "preventable" diseases generally and its significance was so indeterminate that it was ⁹⁵of little use.

Blyth was emphatic that the cause of epidemic disease was contagion. He claimed that contagion was propagated "in each instance, we believe by extremely minute particles of living matter, bioplasm, capable of growth, individual life and excessive multiplication when circumstances ⁹⁶are favourable." However, Blyth held a distinct view about bioplasms from Lionel Beale. He believed

that these particles were analagous to any other insect or animal, the absence of any destroying agency for which would result in massive proliferation.

Like all living creatures, each germ is struggling for existence, and in the absence of certain destructive agencies, will increase indefinitely. Probably one of the controlling checks is food. An epidemic makes its appearance it attacks all those susceptible to it, reaches its height, the soil is exhausted, the germs wither and die for want of any nutrient.⁹⁷

No question or doubt remained in Blythe's mind, regarding the virulent success of an epidemic and its subsequent decline as it had done for Wilson in 1873.

In the later editions of Wilson's volume his ideas also underwent critical review. The sixth edition of the Handbook, published in 1886 contained two new chapters replacing the original one dealing with prevention and disinfection. He discussed infectious diseases as a separate topic and dealt with disinfection as a series of practical rules.⁹⁸ Still using the classification of zymotic diseases from his original text he now argued a case for the 'de novo' nature of their origin. The main feature regarding the germ theory of disease as far as Wilson was concerned, was its adherence to the principle of specificity. He felt that this undermined the various propositions of Beale, Hallier and Koch concerning the bioplastic, fungoid and bacteriological theories of etiology.⁹⁹ The question had become too narrow to allow for the possibility of several zymotic

diseases differing greatly in the nature of their origin, in his view. The wide variety between the infectious behaviour of different diseases led him to believe that they may have any one of a number of different types of causation, including the possibility of arising heterogenetically and in some cases outside of man with "a birth-place among the common putrefactive changes of dead organic matter."¹⁰⁰

In the decade between Blyth's Dictionary and Wilson's 1886 edition, a number of new authors produced related texts, but none of the English authors intended their books as instruction and reference manuals in the same way. The literature on hygiene as a regimen of personal health continued with collections of essays, such as that of Charles Kingsett.¹⁰¹ There was a great deal of other European literature on hygiene produced at this time and American text books, such as the huge two volume study by Albert Buck, Treatise on Hygiene and Public Health,¹⁰² in 1879. Amongst the German literature two of the most important texts produced during this period were Pettenkofer's first edition of the Handbuch der Hygiene- und der Gewerbekrankheiten, and Carl Flugge's,¹⁰³ Lehrbuch der Hygieneschen Untersuchungsmethoden. A major French publication during this period was Alexandre Proust's, Traité D'Hygiene.¹⁰⁴

After Edmund Parkes' death, responsibility for revision of the Manual fell to his successor at Netley, Francis S. B. François de Chaumont.⁹ De Chaumont had more definite ideas regarding the development of germ theory than his teacher and predecessor. Even while working with Parkes, in 1875, he delivered a series of lectures on state medicine, to the Society of Apothecaries, in which he revealed his own distinctive understanding regarding etiology.¹⁰⁵ From the outset he acknowledged the controversial disagreements amongst his colleagues and he was also clearly aware of the importance of the debate to the development of hygiene. The controversy effectively created two classes of hygienists.

Thus a disbeliever in contagion will probably think isolation of infected cases unnecessary, and look upon quarantine as a delusion. A disbeliever in malaria might be expected to be indifferent as to whether a house was built in a marsh or not.¹⁰⁶

The central issues were complicated by further disagreements on details; the possibility of water or air borne dissemination of individual diseases for example. De Chaumont was pleased that the range of controversies had not succeeded in outlawing any particular mode of prevention and that the basic principles of a pure environment had incorporated the fluctuations of theory without being undermined.

However,

there is still something beyond, for although the strict interpretation of pure air and pure water would at once exclude the idea of any morbidic poison being present, yet we must perforce view the possible introduction of such poison at special times even where purity is believed to be attained. What special means can we use then besides to protect us from disease? ¹⁰⁷

The "special means" which De Chaumont went on to elaborate were those measures which he earlier cited as belonging to the "believer in contagion", isolation, disinfection and included a lengthy account defending the Contagious Diseases Act.

In his interpretation of the nature of epidemic disease he articulated his theory of causation. Like Parkes he was clearly a disciple of the theory of specific poisons and equally, an opponent of the theory of heterogenesis. In an elaborate critique of Bastian's research he rejected the "de novo" origin of disease on all counts. He was prepared to accept an evolutionary theory of organisms applied to disease germ species, and accepted that diseases could die out. He suggested, for example, that close scrutiny of Egyptian hieroglyphs might reveal descriptions of diseases which had not been experienced in modern times. Although it would be possible, in De Chaumont's view, for one species of disease to develop into another he rejected completely any proposition of one disease sharing

De Chaumont suggested that ideas of propagation of disease without any specific poison, through aerial, telluric or cosmic influence resulted from misleading anomalies which had arisen in the history of epidemics. The "occult influence" in disease theory was, he thought, understandable for this reason but there was no evidence to support any of these accounts. The final resolution of the current conflicts on the nature of disease propagation, however, he believed would be achieved through
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statistical evidence.

De Chaumont published three editions of Parkes' Manual, in 1876, 1883 and 1887. He added and subtracted substantially to the original text. The revisions were not immediately obvious but close examination reveals that vital sentences have been altered or replaced sometimes changing the meaning entirely; for example in the critical discussion of diseases produced by impurities in the air. The last revision which Parkes made himself to this passage was in the 1869 edition. This revision contained a classification of infusoria on the basis of the fungoid theories of which Parkes had remained extremely sceptical. De Chaumont retained the sceptical passages but added a great deal of argument by supporters of the theory, e.g. Klebs, Tommasi-Crudeli, Nägeli and Fodor, giving the text a new balanced tone.

The second paragraph of this section dealing with, what Parkes had believed to be the unknown nature of contagia was altered by removing one sentence and replacing it with another. After discussing Beale's theory of bioplasm, Parkes had simply added that, whatever the case may be, it was evident that moist air assisted the success of the poison. This sentence was dropped by de Chaumont and replaced by one which stated that,

It is also probable that some if not all, the disease poisons are really living organisms, a view very widely received now both in this country and elsewhere.¹¹⁰

It was in the chapter dealing with disinfection however where de Chaumont imposed his own perspectives upon the text most extensively. Up to the discussion of Beale and Hallier the text remained unchanged but the topic of bacteria was completely revised. By the time of the 1887 edition, de Chaumont had turned this section into a discussion of all the current researches and discoveries of specific bacteria including the works of Klebs and Tommasi on malaria, Koch on the tubercle bacillus, Beveridge's analysis of milk bacteria and Pasteur's work on fowl cholera, and the attenuation of cultivated viruses plus his¹¹¹ investigations into hydrophobia.

Parkes had originally followed the first paragraph on bacteria with a second in which the opening sentence had suggested that "yet in some

of the epidemic diseases, no bacteria have as yet been found" and justified his statement by¹¹² citing the work of Lewis and Cunningham. De Chaumont retained this, but contradicted its intention by citing the achievements of Koch, on the cholera vibrio, even though he was careful to acknowledge the Edward Klein and Henege Gibbes study of 1885.¹¹³ Finally, de Chaumont explained away Parkes' attempt to reinterpret bacteriology in terms of a variable chemical action in the blood, by adding a qualifying sentence which suggested that,

Another and more probable view is that there are benign Bacteria as well as malign and the latter cannot continue to exist in the presence of the former, in fact that they are crowded out. Some of the experiments of Foder and Miquel seem to show this.¹¹⁴

De Chaumont subsequently replaced the speculative passage in which Parkes reflected upon his general uncertainty and bemusement of the new etiology with an extensive survey of all the morphological research¹¹⁵ completed in bacteriology throughout the decade.

Under the guiding hand of de Chaumont therefore, the Manual, entered the spirit of the bacteriological era, and was able to retain its status as still a basic and appropriate instruction text in hygiene. In this respect, the Manual, to some extent, remained ahead of many of its contemporary English publications. Even toward the end of the '80s there were standard text-books being produced which only barely possessed an incipient theory of bacteriological propagation

interwoven into their primarily practical rhetoric. By the beginning of the new decade there were some authors, however, which were attempting to bridge the divide between germ theory and bacteriology. Among them were Louis Coultman Parkes and Alexander Winter Blyth.

L.C. Parkes' first edition of Hygiene and Public Health and Wynter Blyth's Manual of Public Health were both published in 1890. Although Parkes retained the format of his uncle's original textbook, dividing the subject of hygiene into environmental influences and communicable diseases, a bacteriological theory of disease propagation underlined the entire text. The germ theory of contagia, Parkes stated in chapter XIII, now assumed that microscopic living particles of disease existed, organised in structures capable of independent life, within or outside the body. Like many of his contemporaries Parkes used the term "schizomycetes" to describe these particles, and Nageli's classification of them.¹¹⁶ He did not however share Nageli's uncertainty as to their animal or plant nature. Instead Parkes cited Pasteur's yeast fermentation analogy to substantiate his view that the lowest forms of animal life were responsible for the putrefactive changes to which all organised structures were subject. He carefully distinguished between infectious and contagious diseases, and suggested that the

to denote not those diseases which resulted from fermentations in the body fluids, but to indicate the whole class of ailments with a microbial origin. On this basis Parkes drew up a useful classification of diseases of his
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own.

The real advent of bacteriology began however for Parkes subsequent to the demonstration
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of pure cultures through the use of Koch's postulates. Hygiene had now to re-define prevention of communicable disease and he outlined the basic principles on which it should be based. Firstly, it should make the individual less susceptible when possible through protective inoculations. Secondly, it should reduce epidemic spread through compulsory notification and isolation. This should be supported by quarantine reducing the portability of infections. Lastly, it should encourage the
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use of various disinfectants and methods of disinfection. Parkes did not elaborate upon these issues however but simply cited them as the principles upon which hygiene in the future would be based.

Alexander Wynter Blyth's Manual broke the mould of Edmund Parkes' model hygiene text-book by dividing the material objectives of hygiene primarily between the statistical analysis of disease dissemination and the control of what he termed the "zymotic (micro-parasitic)" diseases.

In the same way as L. C. Parkes, he defined zymotic as that class of preventable disease which had a micro-parasitic origin. The micro-parasitic metaphor fascinated Blyth. He described the disease process as a "micro-tragedy" wherein life could be observed "preying upon life"¹²⁰. The new etiology was a story of "micro-strife" between invading strangers and defending inhabitants. He felt that it was as yet however impossible to classify micro-parasitic diseases on a sufficiently scientific basis. Instead, he provided what he called a provisional grouping¹²¹ of them for the purposes of prevention.

At the outset of the new decade therefore English hygiene test-books were beginning to incorporate the bacteriological explanation of the disease process into their essentially practical, environmental discussion of prevention. In 1891, however, the whole subject of the "modern science of hygiene" came off the pages of instruction text-books and into the arena of public debate. During this year it became London's turn to host the Seventh International Congress of Hygiene and Demography and it is to this, somewhat spectacular event, that we now turn our attention.

Hygiene 1891: The Seventh International Congress
of Hygiene and Demography

The International Congress of Hygiene began in 1877 at Brussels. under the presidency of the King of Belgium.¹²² After that, they were held at varying intervals of two or three years in different capital cities within Europe. The congresses were organized by a Permanent International Committee of leading hygienists, the president of which was Paul Brouardel, Professor of Hygiene and Legal Medicine at Paris.¹²³ After the second congress the International Committee decided to add a division of demography to its proceedings and thus the full title was subsequently assumed. At the fourth congress, held at the Hague in 1884, it was suggested to Henry Corfield, who represented the Sanitary Institute on this occasion, that a future meeting should be held in London. After the amalgamation of the Sanitary Institute with the Parkes Museum, Corfield was able to report to the Vienna Congress in 1887 that a sufficiently large hygiene body now existed in England to carry forward a project for a London Congress. The Sanitary Institute and the Society of Medical Officers of Health subsequently undertook the planning and financing of the seventh congress between them. Both institutions elected delegates to represent them on a Permanent Committee which included Corfield and Shirley Foster Murphey.¹²⁴

In December 1888 Corfield and Murphey circulated

requiring them to nominate an Organizing Committee for the London one. A committee was subsequently formed and held its first meeting in June 1889 with Corfield and Murphey as secretaries. They set up head-quarters at the Parkes Museum. At the second meeting, held on July 3rd 1890, they received the agreement of the Prince of Wales to become the president of the Congress, and the patronage of the Queen herself. In November that year Shirley Murphey resigned as secretary due to the pressure of work from his new appointment at the London County Council and Vivian Poore, Professor of Medicine at U.C.L., assumed his position. Poore became the general secretary responsible for finance and domestic organization and Corfield undertook the duties of a foreign correspondent arranging for the international delegates to provide papers and discussions.¹²⁵

Financing of the Congress was arranged in a number of different ways. The municipalities were circulated with a letter of invitation signed by the Prince of Wales. This resulted in sixty-six municipalities sending delegates who contributed £1000 from their authorities. Private donations by individuals and institutions plus the fees of 2,483 full members and 400 lady members amounted¹²⁶ to an additional £8,200.

In the autumn of 1890 a public meeting was held at the Mansion House in the City of London, at the invitation of the Lord Mayor, to make the "aims of the congress more widely known to the public".¹²⁷ The relationship set up by Murphey and Corfield with the City Corporation was highly beneficial to the congress project. The Corporation donated a further £2000 for a "conversazione" to be held on the first evening. They also provided the organizing committee with alderman John Stuart Knill to arrange the entertainments events for the entire week of the congress.¹²⁸

The organization of the congress differed somewhat from those which had preceded it. The most significant change was that it contained ten sections.¹²⁹ At Vienna for example the sections were: 1) Water and Drainage, 2) Factory Legislation, 3) Cholera, 4) a section for papers without discussion, and 5) Demography.¹³⁰ In the 1891 congress the whole discussion took place on a different basis, now the sections were to be: 1) Preventive Medicine, 2) Bacteriology, 3) The Diseases of Animal and Man, 4) Infancy and Childhood, 5) Chemistry and Physics, 6) Architecture, 7) Engineering, 8) Naval and Military Hygiene, 9) State Hygiene and, 10) Demography.¹³¹ Each section was assigned a president, who also organized

the arrangement of papers and speakers. The secretaries, Poore and Corfield, explained that one of the reasons behind the direction of the 1891 Congress was the new role of "pure science" in the proceedings.

If sanitary details and sanitary laws be not based upon scientific principles, they are apt to be worse than useless and the gathering together of bacteriologists, chemists, medical men, veterinarians and agriculturists for the purpose of mutual discussion, constituted a feature which one may hope marks an era in the scientific history of the country and is a good augury for the future.¹³²

The Seed and the Soil: Aetiology and Prevention

After the opening speeches made on the first day, 11th August, the Congress proceedings began in earnest. The first section discussed the current relationship which the art of preserving health now bore to the medical prophylaxis of preventable diseases. The president of the section, Joseph Fayrer,¹³³ suggested that the art of hygiene had become the scientific prevention of "that which has been called the self-imposed curse of dying before the prime of life."¹³⁴ This could be achieved by making the "soil" upon which the "seed" of disease "is sown so inhospitable as to render it sterile."¹³⁵ Thus the prevention of disease and the science of hygiene were as Parkes had stated in 1864, entirely dependent upon etiology.

The current state of etiology and its relationship to hygienic prophylaxis was nowhere more clearly reflected than in the discussion in this section of diphtheria.

The first topic in the preventive medicine section was quarantine, with particular reference to maritime cholera.¹³⁶ On Wednesday, August 12th the section discussed diphtheria. This became the major issue for Fayrer's group and the only one on which it made any resolutions. In 1891 the mode of dissemination of diphtheria was an issue of intense controversy. The researches of Klebs and Loeffler had identified the bacillus in 1881.¹³⁷ The action of the toxin produced by the microbe from the seat of infection had been documented by Behring and Kitasato.¹³⁸

The mode of dissemination remained as yet undetermined. When they discussed the unresolved issue of the spread of the disease, however, a number of papers delivered in the preventive medicine section referred to the "origin" as being still unknown. For example, Jules Bergeron of Paris suggested that,

leaving aside the question of its germ origin we know nothing of its origin.¹³⁹

Bergeron referred specifically to the mode of transference of the disease as its undetermined origin. In agreement with Brouardel, Bergeron pointed out that until the "origin" in this sense was revealed the disease would remain "unavoidable".¹⁴⁰

The medium of transmission of diphtheria dominated a number of the papers in the discussion. Much attention was given to damp earth in the foundations of dwellings containing diphtheria victims. Dr. Scrivens of Tournai, also suggested that since the "true origin" of diphtheria was unknown prevention must depend upon statistical data about dissemination. His paper was a report of his own research on Flemish diphtheria morbidity. He compared the rate of diphtheria incidence in different areas and correlated these with statistics on sub-standard dwellings in respect of insufficient irrigation of soil.¹⁴¹ Much of the other research presented in the section supported Schrivens' argument such as the work of S. W. Abbott, working on diphtheria rates in Massachusetts.¹⁴² The mortality figures for Massachusetts showed a high prevalence of diphtheria in rural areas. This contradicted the distribution patterns for England and Wales, which showed high prevalence in urban, densely populated areas. Abbott concluded therefore, that in Massachusetts his experience challenged the view that infectivity in diphtheria occurred from person to person contact.

Charles E. Paget, M.O.H. to Salford, the son of George Paget, argued an exactly contrary proposition.¹⁴³ In a "Local Examination of the Difference in Susceptibility

to Diphtheria Between Old and New Residents" in Salford, Paget demonstrated in fact the variation in incidence between residential areas was determined not so much by length of residence as by the "relation of their population to their respective acreage."¹⁴⁴ Paget concluded therefore that the major determinant of diphtheria transmission was personal intercourse and that consequently the most densely populated areas of Salford contained the most susceptible inhabitants.¹⁴⁵

Lack of certainty about the transmission of diphtheria resulted in lack of universal preventive measures. Contradictory accounts of the mode of transmission such as those presented at the Preventive Medicine section resulted in controversy concerning measures instituted by health officers to control epidemics in their localities. School closure and quarantine of school age siblings remained difficult administrative problems in this respect.¹⁴⁶

Bacteriology and the Status of Experimentally Induced Explanation in the Technology of Hygiene

As the British Medical Journal pointed out at the time, the Bacteriological section of the Congress was one of its most successful features. In particular the historic discussion on the nature of immunity which

took place on the 12th of August was described by both the Lancet and the B.M.J. as being a sufficient justification of the entire proceedings.¹⁴⁷

Joseph Lister, president of the section, noted in his opening address that only a decade previously, in 1881, Koch and Pasteur presented their respective works on the attenuation of vaccines and pure culture cultivations of bacteria in a solid medium at the International Medical Congress held in London that year.¹⁴⁸ Since that date, bacteriological research had expanded extensively. Throughout the 1880s there had been a great deal of morphological work completed on the identification of new disease bacilli. The new chemical pathology of the 1890s made the experimental investigation of the actions of these organisms possible by virtue of Koch's method and postulates. There still did not exist as yet, however, any coherent paradigm or law-like theory about the behaviour of microbial organisms. The search for such an explanation was inherently linked to the analysis of the mechanism of immunity. Biologists and chemical scientists were asking two related questions: how do bacterial organisms achieve their pathological action in the body; and how does the body survive it naturally, and how might it be induced to survive it artificially?¹⁴⁹

During the ten year period preceding the Congress Elie Metchnikoff had developed his theory of the phagocytic mechanism of natural immunity. He had, since 1888, become the leading bacteriologist at the Pasteur Institute in Paris.¹⁵⁰ This theory had been challenged by the work of Emile Behring and his associate Shibasaburo Kitasato, working under the direction of Koch at Berlin. They succeeded in demonstrating the antigenic action of the blood serum in their research into the action of the diphtheria coccus.¹⁵¹ The phagacytosis controversy was, at the time of Congress, the bacteriological issue of the moment and was represented at the proceedings by some of the main protagonists. Emile Roux, Hans Buchner, Rudolph Emmerich, Paul Ehrlich, Hueppe of Vienna, Bang of Copenhagen, Metchnikoff and Behring and Kitasato themselves all participated in the dabate.

Emile Roux began the discussion with an introductory address which outlined the scope of the controversy and he also gave an account of the physiological theory of cellular immunity.¹⁵² Hans Buchner gave a short paper after Roux, stating his humoral theory of acquired immunity. Buchner opposed the physiological explanation of phagacytosis on the basis of his research into the alkaline blood-serum of rats and its ability to create immunity from anthrax in mice after inoculation.¹⁵³ The main

paper of the day was given by a much lesser known bacteriologist than either Roux or Buchner, Ernest H. Hankin.¹⁵⁴ At this time Hankin was a fellow of St. John's College Cambridge and, apart from a few articles on researches into immunization, he had published very little before the Congress took place.¹⁵⁵ Hankin attempted to bridge the great theoretical divide between the chemical and biological explanations of bacterial action with a theory of "defensive proteids". Hankin's paper consisted mainly however of research which the antigenic theory was based upon.

Hans Buchner had shown through his experiments on anthrax that the extremely alkaline rat-blood serum, which was normally immune to the disease, became susceptible to it once the alkaline quality of the blood-serum was neutralised. Hankin suggested that he could demonstrate how the alkaline action of the blood came about. He took issue with Buchner's assertion that the bactericidal action of the blood-serum was due to a "remnant of vitality" from the blood plasma. Alternatively, Hankin claimed to have proved that this action was produced by a "particular ferment like proteid known as cell globulin 'B'", which constituted a defensive proteid. Hankin reproduced Buchner's research on the alkaline blood-serum of rats. He then injected the cell-proteid into mice which had already been injected with neutralised rat-blood serum, along with virulent

anthrax spores. The proteid succeeded in preventing the development of the disease. On the basis of his research on anthrax, Hankin asserted that defensive proteids were a cellular production responsible for the immune mechanism of the blood-serum as a whole and that the different forms which their action might take could be expressed in a system of classification.¹⁵⁶

Response to Hankin's work was generally ambivalent, but it was rejected completely by Metchnikoff. As Metchnikoff rose to his feet to deliver his defence of the phagocytic theory, he was loudly cheered by the Congress members. He had brought with him substantial documentation of his research which was on display. The main tenet of his argument against the chemical theory was that the bactericidal power of the blood only occurred in diseases such as tetanus, diphtheria and anthrax which were distinguished by their exceptionally toxic character, and by the absence of the diffusion of microbes.¹⁵⁷ Metchnikoff claimed, the work on antigenic blood-serum was restricted to an explanation of immunity against specific infections in specific species. The theory of phagocytosis was by contrast,

based on the evolution principles of Darwin and Wallace, (which) can in its turn become useful in the study of the phenomena of organic evolution. In studying this subject we are, so to say, spectators of the struggle, and we have before our very eyes the phenomena of natural selection itself.¹⁵⁸

The significance of the immunity debate was not only that the mechanism was important for disease prevention in terms of prophylactic vaccines. It revealed that the whole nature of the bacterial process was being discussed in the arena of hygiene as a technology of prevention. Germ theory was no longer a vague spectrum of ideas wherein the disease entity was of a relatively indeterminate nature. The specificity of disease had taken on a new meaning in prevention. Not only did specific diseases have specific organisms at their origin but also had a specific pathologic mechanism. The new object of hygiene prophylaxis was this matrix of chemical and biological relations of the disease process.

Prophylaxis and Prevention: Municipalism and Disease Control

The president of the Chemistry Section, Sir Henry Roscoe, highlighted the fact that the chemistry of the disease process was an essential foundation¹⁵⁹ of hygienic prevention. The identification of the morphological characteristics of micro-organisms was only an essential preliminary to prevention, according to Roscoe. He gave an account of the historical role of chemistry and physics in the development of sanitary science and public hygiene. The chemical analysis of airs, waters and places first led to the principles of environmental prevention. The hygienic process had since moved

into a new era in which the most recent discoveries illustrated that the health of the community was dependent upon the actions¹⁶⁰ of microbic life. Microbic poisons and the body's mechanism for destroying them revealed however that,

the ultimate causes of epidemic disease rest upon a chemical basis, and as we find in a simple chemical antidote for poisoning by any of the commoner poisons, so it would appear that an antidote for hydrophobia, for example, is to be found in the complicated chemical products of the life of the micro-coccus characteristic of disease.¹⁶¹

Despite the promise of Roscoe's opening address the section restricted its discussions to the subjects of soils, fog¹⁶², the air of large towns and sewage farming. Environmentalism still preoccupied a great deal of the time of both this and the sections dealing with engineering and¹⁶³ architecture at the Congress. The effect of the scientific horizons explored in the bacteriology section was more evident in the discussions dealing with the relationship of diseases between animal and man, in particular, that concerning the dissemination of bovine tuberculosis and contaminated¹⁶⁴ milk.

The section on State Medicine reflected how the new scientific consciousness expressed at the Congress had an impact on the boundaries of hygienic expertise. The first paper was given by a Dr. Simon

from Breslau. He began by suggesting that there were two fundamental requirements for the public health which were determined by scientific hygiene. Firstly, that legislation should be based on scientific results alone and secondly that the laws of hygiene should be popularised by public health experts with responsibility for educating the community at a local level. Neither of these features of a public health system could in his view be achieved without the other but the key to both was professional hygienic expertise. Local health administration by professional hygienists would be the only way to ensure that preventive medicine was instituted on a scientific basis and that the local communities were sufficiently educated to understand it and make it work. His ideas of local health administration were based on the English model but he envisaged an ideal system where the local board was a small body of appointed professionals, rather than elected representatives, with compulsory powers over a comprehensive field of functions. The organization of local health administration should be both internal and external he believed. It should have both a department of works, executing the "canalisation" of water-supply and settling building plans, and a department which conducted chemical investigations into the adulteration

of foods etc. The latter should be joined with "a special bacteriological section especially for examination of disinfecting processes and controlling disinfection." Two further divisions of administration, Simon proposed, should be one dealing specifically with the administration of notification and isolation, and another analysing hygiene and medical statistics. No efficient administration was possible however, he believed, if it was not assisted by compulsory legislation; the isolation of infectious persons being a prime example.¹⁶⁶

In the debate which followed Simon's paper there was general agreement with his proposals but, as Dr. Willoughby of London pointed out, the choice of the English system was an unfortunate one. The English local boards were often composed of "persons ignorant of health principles and sometimes interested in offending against them."¹⁶⁷ The need for the primacy of expertise over vested interest was clearly expressed in discussion of whether or not the State should undertake scientific investigations into the origin and causes of disease, and whether it should provide laboratories for doing so.

The M.O.H. for Leicester, Henry Tomkin, pointed out the limitations placed upon health officers for dealing with local epidemics by the

lack of etiological knowledge. The situation was highlighted for him, when he needed to discover the source of an epidemic of diarrhoea in his own area. Often, he suggested, it was impossible for a single officer to undertake the volume of work involved without aid from the State. Individual M.O.H.s could not

obtain all the detailed information, extending over the length and breadth of the land, connected with obscure problems of disease causation or compare, accurately and scientifically conditions existing in one district with those in another or others, though they may be of the utmost importance to enable us to arrive at any approximately accurate conclusions. 169

The need for State assistance had, Tomkin believed, already been tacitly admitted through the establishment of investigations by the Local Government Board.

The field however was immense in his view and the surface had, as yet, hardly been scratched. Urgent issues were, cancer, diphtheria, tuberculosis, pneumonia and influenza. The great advance that bacteriology provided for public hygiene was, he claimed, being carried out by individuals largely without State support. This situation left England far behind the Continent, and ^{was} /deplorable when sufficient funding was already available for, "the improvement of the art of killing and slaying"; namely, "the splendidly equipped laboratories at Woolwich for experimental studies connected with war."¹⁷⁰

These sentiments were matched by those of Almroth Wright who also put forward the case for increased State

provision for systematic research programmes. He had already presented papers in the bacteriology section of the Congress,¹⁷¹ on Wooldridge. Here, however, he articulated his strong views on funding for medical research.¹⁷² During 1891 Joseph Lister was in the process of urging the Board of Trade to incorporate the British Institute of Preventive Medicine. Lister reminded the Board that institutes of bacteriological research had already been established and funded generously by the governments of France, Germany, Italy, Rumania, Austria and Turkey but he added that he did not expect the English State would do similarly. What he emphatically demanded however was that it should at least not stand in the way of the establishment of a laboratory by refusing to incorporate it under the Companies Act. The British Institute received incorporation but no funding.¹⁷³ Prior to the British Institute there had been few laboratory facilities for bacteriological research. The Brown Animal institute had operated with some success under the direction of Victor Horsley before he moved to University College Pathology department.¹⁷⁴ Almroth Wright however had always openly condemned the lack of funding for medical research and eventually brought the issue to the attention of the general public in

a letter which he had published in the Liverpool Daily Post in 1905.¹⁷⁵

His paper delivered at the Congress was the first in which Wright discussed funding systematically.¹⁷⁶ He felt that supporting research was not an optional and charitable act by the State but one which it could no longer afford not to undertake. It was for precisely this reason that the State had undertaken all other sanitary responsibilities in the past. The provision of State laboratories for research into the causation of disease and immunity was, according to Wright, a natural extension of the legislation which had been procured for the prevention of disease. In his view setting up research laboratories^{as} was as essential/^{and} equivalent to making the¹⁷⁷ notification of disease compulsory.

The current state of research funding in England left science and scientific men on the margin of society, Wright argued. It was for this reason that young scientists were forced to go to the Continent for their training. Here, in England, to be a research scientist was to accept the risk of insecure employment and income. Wright pointed out that it was only due to individuals who were prepared to accept such an uncertain career, that England had not dropped out of the race for scientific achievement altogether. There was, he

believed, a need for more funding of individuals also in addition to institutions.¹⁷⁸

Wright included a discussion of the anti-vivisection movement in his paper. He stated emphatically that the views of this group were misguided. They were a minority, who simply managed to gain for themselves a great deal of publicity. Most importantly however Wright expressed a deep concern that this movement should not be used by the State as an excuse for not providing¹⁷⁹ funds for research.

If State research was simply another branch of the preventive medical apparatus yet to be realised, there were many others which the State Medicine section of the Congress discussed and passed resolutions on; new legislation regarding burial procedures, the statutory training and registration of architects and sanitary inspectors, revision of the contagious diseases acts, the teaching of hygiene in schools, compulsory notification of disease and municipal provision¹⁸⁰ of sanitary dwellings for the working classes. The areas of state provision required for prevention therefore, were extending far beyond those of simply securing a pure water supply and effective sewage system. The field of preventive administration was becoming a comprehensive one which coincided with, even if it was not directly determined by, a new scientific consciousness and awareness of the role of

expertise. Direct links at the Congress proceedings between bacteriology and preventive procedures were most evident in the discussions on the inspection of school children, the diseases of animal and man, the prevention of diphtheria, regulations of the disposal of the dead and the repeated assertion that the corner stone of administration was an efficient system of notification, isolation and disinfection. Apart from these direct links however an important feature of the relationship of the new etiology to prevention was the emergence of scientific certainty underlying a new expertise, legitimising demands for compulsory State intervention in the provision of health care for the community.

The Technology of Hygiene, 1892-1911

The immediate consequences of the Congress and effects upon the community of hygienists in England directly, are difficult to assess. It was widely reported in both the medical and regular press, and no doubt the vast size of its membership and some of its spectacular proceedings and entertainments throughout the week caused some public attention during 1891. At the last meeting, the chairman of the Congress, Douglas Galton, suggested that a general comparison between the continental and English approach to hygiene had been a significant feature of the events. Europe

had outstripped England in the pursuit of "theories upon which much of modern hygienic progress is based",¹⁸¹ he suggested. Whereas in England, he claimed, this progress had been hindered and consequently there had been more concentration upon the practical questions of water-supply, drainage¹⁸² etc. Certainly the English hygiene text-books of the period preceding the Congress would have supported Galton's assertion. There were however a new wave of publications which followed it which reflected some changes in perspective.

George Wilson, for example, immediately brought out a revised edition of his Handbook in 1892 in which the chapter on communicable diseases was rewritten. This was done in order, he claimed, to summarise "the recent advances in bacteriological research" the source material for which was, he stated, the proceedings of the 1891 Congress, "which may be said to epitomise the views on the subject entertained by the leading bacteriologists of the day, both in this country and abroad."¹⁸³

Two other leading members of the S.M.O.H. published hygiene text books at this time also. John F.J. Sykes had given something of a radical paper at the Congress, in the Architecture Section, demanding municipalisation of housing supply for the working classes.¹⁸⁴ He published a book on Public Health Problems, in the Contemporary Science Series, edited by Havelock Ellis, in 1892. This was an equally radical break with the traditional hygiene text-book.

It contained no chapters on Airs, Waters and Places but dealt instead with the physical, chemical and biological bases of disease. The second part of the book was devoted entirely to the current bacteriology of disease propagation. Part three consisted of an account of all the defensive measures available against communicable diseases.¹⁸⁵

From the outset, Sykes spelt out his own concept of preventive medicine and its goals. Health could, he believed, be defined statistically and this was the basis of all preventive work. In order to improve it however it was necessary to understand the processes which destroyed it. In this respect the science of modern pathology was changing the whole nature of prevention as the result of Pasteur's discovery of the method of growing bacilli outside the body and Koch's discovery, in 1880, of separating species of microbes by cultivating them on the surface of a solid medium. The expansion of the science of bacteriology since that time, Sykes believed, could leave no remaining doubt about the parasitic nature of infectious diseases. What remained to be determined for the purposes of effective prophylaxis was the variation between organisms in different environments and equally important was the whole question of the attenuation of their virulence and the mechanisms of natural and artificial immunity.¹⁸⁶

Sykes' view of the relationship of the public health system to the new revelations of pathology was that there was a, "complete organisation at hand for the practical application of measures indicated by scientific research"¹⁸⁷ Prophylaxis had followed etiology closely, he asserted, but there was a special feature of the later developments which made hygienists recognise that they could never have achieved their aims, "by the prolongation of the existence of the more favoured members of the community. Its greatest justification lies in increasing the health and powers of workers and especially of the industrial classes."¹⁸⁸ Sykes stated categorically that for this reason, hygiene:

is distinctly socialistic in its tendencies as distinguished from individualistic, it is, in the widest sense, humanitarian.¹⁸⁹

It was a system which would improve by extending beyond national boundaries. Sykes' view of patriotism was that it was really best served by an internationalist philosophy of health, recognising that minimising the evils of famine and war of neighbouring nations improved the chances of one's own society.¹⁹⁰

Although Sykes recognised the multifarious chemical and physical influences affecting the health of the body, he felt that the object of hygienic prophylaxis was primarily the biological causes of disease:

Communicable diseases due to biological causes claim the first attention, and prophylactic measures for their suppression take precedence in the health administration of the community.¹⁹¹

It was equally clear from Sykes that he believed there to be, "two distinct classes of remedial effort" :

1) sanitation dealing with chemical and physical influences on disease and 2) the prophylactic measures to be taken against communicable disease.¹⁹²

Sykes' account of the nature of communicable disease was a comprehensive history of theories up to and including the most contemporary.¹⁹³ Apart, however, from the scientific erudition demonstrated in the first two parts of the book, Sykes also gave a detailed account of contemporary hygienic prophylaxis as he understood it. The measures which he listed and dealt with in separate chapters were: quarantine, notification, isolation, disinfection, inoculation and vaccination, the protection of man from the diseases of animals and finally a re-appraisal of building methods and means of sanitary house provision for the working classes. Taking these chapters together they form a system of preventive administration. Sykes believed that the sanitary idea of the earlier period which he attributed to both Chadwick and Simon was the foundation of, but had been superseded by, this modern system as he depicted it. The essential feature of this development was that it was a system, based on a set of interdependent functions. Prevention could no longer be achieved by single measures, instituted in an ad hoc fashion against individual crises which occurred in the health of the community. Alternatively, it was increasingly planned in advance in a

comprehensive rational system of administration.

For example, Sykes pointed out how the registration of sickness and mortality had laid the foundations for notification. Notification itself however was of extremely limited value unless it was executed as part of an interdependent system of isolation and disinfection.¹⁹⁴

Not all hygiene texts published in the early '90s were as clear about the new prophylaxis as Sykes. His colleague Arthur Newsholme for example brought out a revised edition of Hygiene, which was first published in 1884, but retained the conservative format of the original. The 1892 edition clearly remained based on the model of Edmund Parkes' Manual, but did include some new material on parasites and disinfection.¹⁹⁵

A major English publication of the decade also published its first volume in 1892. This was the eventually three volumed Treatise on Hygiene and Public Health, edited by more colleagues of Sykes and Newsholme, Thomas Stevenson and Shirley Foster Murphey.¹⁹⁶ The first volume set out the rationale behind the work. The idea was suggested to the editors by François de Chaumont who felt that a treatise of collected essays by leading individuals in their special areas of expertise should be produced to cover the separate topics within the science of modern hygiene sufficiently. The subsequent result was a massive document amounting to over 2500 pages.

In their preface to the first Volume, Murphey and Stevenson clarify the history of the practical purposes of public hygiene and the way in which its methods had changed as the result of the bacteriological theory of disease. Their text was aimed at the M.O.H. specifically, firstly as a student for a post-graduate diploma and secondly as a practitioner.¹⁹⁷ The role of the M.O.H, they claimed, had changed from that of an empiricist as had been envisaged under the 1848 Act to that of a professional practitioner of preventive medicine. The establishment of the intimate relation of micro-organisms to disease causation had, in their view, brought about this fundamental change in practice. The science of hygiene now dealt with environmental influences of health, they claimed, from a new point of view:

The general notions that filth played an active part as a producer of disease are being replaced by a more precise knowledge of the particular maladies that are encouraged thereby and of the circumstances under which filth can conserve and foster the specific entities which are the essential causes of certain of these affections.¹⁹⁸

The first volume dealt precisely with this re-interpretation of the environment in hygiene in a series of sixteen articles on all the traditional subjects of the older text-books, each bringing a new perspective to bear upon them. Volume II had ^{fewer} /: contributions but far greater amount of material dealing predominantly with the pathology of diseases specifically. Indeed the essays on etiology and the natural history of infections by Klein and Thompson took up the first 400 of the the 950 pages of the text. The editors cited Klein,

Thompson and an article by Spencer-Wells and Frederick Lowndes on the disposal of the dead , as being controversial but whose authority was guaranteed by ¹⁹⁹ the reputations of the authors themselves. The third volume was allocated to discuss sanitary law as a separate issue. It related the statutes of parliament and the public orders of the L.G.B. which formed the infrastructure of the public health system, to the practical duties of the M.O.H. in his day to day work.

The chapter on air in the first volume was written by de Chaumont's successor at Netley, ²⁰⁰ James Lane-Notter. His style of presentation strongly echoed that of Edmund Parkes but the content was entirely different. Lane-Notter considered first chemical impurities and secondly, suspended matters in the air. The latter however were considered in terms of the relationship of different types of bronchitis to dust and coal dust, for example. The analysis of micro-organisms in air samples was outlined as a major feature of an officer's work for these purposes . The course, at Netley, Lane-Notter informed his readers, instructed its student officers in the method employed by Koch and the methods of enumeration ²⁰¹ outlined by Miquel and Frankland.

Similarly, in Stevenson's article on water, bacteriological examination was made a priority. . . He also included a traditional discussion about purity of supply etc. but the identification of micro-organisms was highlighted as the main objective

in the prevention of water borne diseases such as cholera and typhoid. The main obstacle to successful analysis, he believed, was the lack of a method which distinguished between pathological and benign organisms. Having evaluated methods of bacteria cultivation for these purposes, by Koch, Frankland, Angus Smith, Klein and Pasteur, Stevenson recommended that of Edgar Crookshank. He compared the success of this method with the failures of those of William Robert Smith, to support his view. ²⁰²

William Monkton Copeman's analysis of the "Influence of Soil on Health", traced the development of individual communicable diseases such as diphtheria, typhoid and cholera, as it resulted from the nutrient value of different soils for their bacilli. ²⁰³ His discussion of malaria was particularly interesting from this point of view. The relationship between certain soil conditions and malarious fevers, was, Monkton Copeman pointed out, one of the oldest associations established in the history of hygiene. The most recent approach to understanding this relationship he stated was to look for the "presence in malarious soils of some organism which might possess the power of transmitting the disease." The competition this research had stimulated between Klebs and Toummasi-Crudeli, Marchiafava, Celli, Lavarani, Osler and Sukharoff would he believed be of great value. Whatever these researches demonstrated, however, Copeman maintained that the object of prevention must still

concentrate on the particular conditions in the soil which encouraged the bacillus to grow. In his opinion this would turn out to be the moisture and 204
decaying vegetable matter contained in marshy ground.

The essay on "Food" by Sidney Martin was a thoroughly modern analysis of the chemical physiology 205
of diet. Martin analysed the nutritive and pathogenic components of food stuffs in terms of their effects on the chemical physiology of the organism. He explained that the presence of bacilli in foods were only one feature of the whole physiological relationship between the chemistry of man and the chemistry of nutriment. The conditions under which bacilli survived or were destroyed was an essential part of this analysis. That determined whether a bacillus could reproduce in man, the disease which it had caused in the plant or animal which had been eaten as food. Until such knowledge was obtained the question of whether tuberculosis could be transmitted 206
through meat, for example, would remain undecided.

The introduction of chemical pathology into the analysis of the environmental influences on health considered in Volume I, was followed by an account 207
of the theoretical foundations of the whole discipline in Volume II. The article by Edward Klein on "The Pathology and Etiology of Infectious Diseases" was an extensive report, over 1,250,000 words long, illustrated by 42 plates. The work dealt with the whole study of bacteria, their morphology, biological characteristics,

action and relationship to animal tissues. He outlined the methods of bacteriological examinations of water, air, dust and food also. He addressed one chapter of his article to infection and contagion and another to disinfection. A further twenty chapters dealt with the analysis of specific microbes, and their diseases.

Despite the extensive erudition which he obviously possessed, Klein revealed some anomalies in his account of bacteria. From the outset he used the term microphyte to interpret the ancient word of contagion into modern language. In a footnote he explained that the term microphyte was greek for small, μικρός and plant φυτόν. 208 He articulated his intention behind the use of the term more clearly in a discussion of the characteristics of bacteria.

Bacteria are microscopic organisms which contain no chloropyll, which possess an investment of cellulose, and are therefore considered to belong to the vegetable kingdom, which multiply by simple division or fission and are therefore called after Nägeli, Shizomycetes. 209

He went on to say that although they were considered to be single celled plants, their action was not typical of plants:

but on the contrary, on the plan of animal cells, they have in an eminent degree the character of destroying or breaking down higher more complex organic molecules into those of simpler combinations. 210

Although Klein referred to Nägeli directly in this passage there was no further discussion of his work in the article and no reason to suppose that

he adopted any more of Nägeli's ideas than the simple notion of fission and perhaps some degree of uncertainty as to the plant or animal nature of bacteriological organisms. He relied far more on the work of Ferdinand Cohn which indicated that Klein had been influenced significantly by the German botanists²¹¹ in the classification of bacteria.

Klein's greatest intellectual influence, however, was clearly Robert Koch, whose work is referred to throughout the article. The greatest advance "ever having been made" in bacteriology, was, for Klein, the²¹² method of cultivating pure cultures in a solid medium. He pointed out, that there were significant discoveries and observations on the nature and morphology of bacteria before Koch's method had been developed. Amongst these he listed equally the achievements of Pasteur, Davine, de Bary, von Nägeli, Ferdinand Cohn, Klebs, Miquel, Maddox, Lister, Billroth, Tyndall, Zopf and Weigart. However, although the results of their work were important they could not , "for a moment compare with the results achieved by Koch by his exact methods of cultivation of bacteria."²¹³ The institution of the method, marked a new era for bacteriology, Klein believed, since it opened up a new world of experimentation for bacteriologists.

This tribute to Koch was ironic under the circumstances in which it was made. Klein is recalled by William Bulloch in his history of bacteriology, as never having

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made any significant discoveries. He did however
achieve some notoriety for claiming to have disproved
Koch's researches on the cholera vibrio. This work
was completed by Klein and Henage Gibbes as an
investigation on Cholera in India for the Local Govern-
ment Board in 1885. The research opposing Koch was
widely publicised and frequently quoted and referred
to in English hygiene text-books; e.g. George Wilson and
L.C.Parkes both cite it. 215
In his contribution to the
Treatise Klein still maintained his position regarding
the cholera research. He explained that his experiments
had not confirmed Koch's hypothesis that the comma
bacilli of Asiatic cholera increased in the small
intestine from where they produce the chemical poison
resulting in the symptoms of the disease. Alternatively
Klein had found few bacilli present in the mucus flakes
of rice water stools at the outset of a case of infection.
Koch had claimed the ratio of the bacilli increased with
the severity of the attack. Klein could confirm no such
relationship and he opposed the principal theory of
Koch's analysis. Instead he placed much greater emphasis
on the conditions under which bacilli were able to
reproduce. Much of the epidemiology of cholera, he
asserted, proved the fact that the disease only
proliferated when there was the correct combination
of factors to provide it with sufficient nutriment. Within
the body, the same principles applied according to Klein.
It was only when the lower intestine was already

diseased by some slight peritonitis infection, that the comma bacilli were able to multiply and reproduce their toxin.²¹⁶

The conclusion which Klein had arrived at in his research on cholera was based upon a principal theory of the pathogenic action of bacteria which was peculiarly his own. The reproductive capacity of a bacterial organism and its pathogenic effects varied according to its breeding ground, he maintained; i.e. the different tissues of various animals in which it was hosted. Thus the pathogenic effects of one bacteria could be observed in some animals and a contrasting harmless effect of the same bacillus could be observed in another species. With regard to the action of bacteria he classified it into two basic forms; the first being that which produced a putrefactive effect on the proteids of tissues and the second being of a more poisonous nature producing toxins. Many bacteria he believed were saprophytic, i.e. could not produce pathogenic results in normal tissues unless they were already in a diseased state.²¹⁷

In the immunity controversy, Klein came down clearly on the side of the antigenic argument. The principle of natural immunity, he believed, was the inimical action of the lymph and blood plasma, an action which may or may not produce phagocytosis which merely assisted the weakening of invading bacteria. The principle of acquired immunity was, in his view, proven to be the

introduction of microbic toxin into an organism, producing anti-toxin which it retained in the blood to render the organism insusceptible on the re-introduction of the microbe a second time.²¹⁸

Klein's essay in the Treatise, mapped out the ground of bacteriology in terms of the modern chemical pathology of infectious disease. His map contained all the controversies as well as the consensus of the times and had its own point of view overtly imprinted on it. The Treatise would not have been "complete", however, in the words of its editors, if it had not included a discussion of the "Natural History of Infectious Diseases."²¹⁹

This task was undertaken by the retired M.O.H. for the combined Hertfordshire and Middlesex districts,²²⁰ T.W. Thompson. The aim of the natural history approach was to deal not only with the origin but also with the dissemination of bacterial infections. The whole nature of causation was dealt with by him from this point of view. The "real" cause of any effect, Thompson maintained, was actually a combination of causes.

In the production of disease many highly important factors are operative in addition to the microphyte itself; for although it may be truly described as an essential element in the cause, it is none the less true that for the effective operation of the microphyte certain conditions of environment are also requisite.²²¹

The environment which he referred to, included both that which was external and intrinsic to the individual.

In Thompson's view, the natural history of the progress and variations of a disease must be the basis of prevention. He dismissed the spontaneous generation theory in this context and suggested instead that variations in epidemicity and the normal evolution of organic life were responsible for the appearance and disappearance of diseases. This accounted for, in his view, diseases thriving on the tissues of animal or man appearing to be new diseases altogether, or microbes becoming pathogenic after a long period of saprophytic existence, or producing a new variety. Thus Thompson believed that although diseases were due to highly specialised "obligate parasites" which always descended from antecedent cases, there were a number of evolutionary avenues through which they might, "in one or another sense, be said to have a new beginnings for human beings." 222

When saprophytic organisms evolved into pathogenic ones, Thompson accepted that they might be described as having a "de novo" origin but not in the sense that was implied by the theory of heterogenesis. He was careful to point out however that this evolutionary basis to the explanation of diseases also undermined the notion of the immutability of disease species. This position was as untenable in his view, as that of spontaneous generation since:

the fixity of type of different diseases differs in degree, a circumstance which may not unreasonably be looked upon as pointing to a gradual specialisation of the causes of disease by a process of evolution. 223

Thompson was full of warnings about "over zealousness" for the new bacteriology becoming a hindrance to prevention. Differentiating the origin of separate diseases should not lead to an excessive differentiation of superficial symptoms. Equally, in his view, this should not be applied to dissemination. Epidemiological and bacteriological definitions were separated in this respect. In epidemiology for example, "what we call a 'disease' is not a specific entity, but a mental conception based upon a rough average²²⁴ of certain morbid manifestations." Building up a conception of the separateness of diseases for the purposes of prevention must, he insisted, be based on analysis of natural history which takes account of morbid origin, period of incubation, duration, period of infectiousness, complications, sequelae, conditions of occurrence and comparison of incidence and geographical distribution. The notion of immutable specificity was incompatible with a natural history approach which must by necessity, he believed, adopt instead an evolutionary theory of species and types.

One of the consequences of adopting a natural history theory of disease propagation was that certain categorical assumptions which had been adopted in the past by the science of hygiene were no longer meaningful. He believed that distributions between endemic, pandemic, and epidemic disease for example should be replaced by

analysis of geographical distribution. Similarly, the synonymy of the terms infection and contagion should be discouraged and the distinction between the two modes of transmission should be re-assessed, and emphasised. Diseases which have particular seats of invasion or channels into the body should be identified according to class, and periods of incubation for different diseases should be categorised. Epidemiology should be used for prediction concerning vulnerability to attack and analysis of periodicity of diseases should be used to predict their behaviour.²²⁵

The Treatise of Murphey and Stephenson, heralded the dawning of the re-interpretation of the science of hygiene in its standard text-books of instruction. Some of its effects on practical administration could be seen in Wynter-Blyth's publication of his lectures on sanitary law for example in 1893.²²⁶ Chapters VI and VII dealt with the creation and revision of duties for M.O.H.s regarding the statutory prevention of infectious diseases. He illustrated, for his students, the model system on which administration could be based with the Metropolitan 1891 Act which provided the districts with a complete structure of compulsory²²⁷ notification, isolation and disinfection. This was the structure A. B. Whitlegge pointed out in his Hygiene and Public Health in 1897, upon which "hygiene in the modern period" was based, together with vital

statistics. The administration of health law was still however, as far as Whitlegge was concerned, without a specific status. There was in his view no single term "for that branch of medicine of which the medical officer of health is the official
229 representative." Certainly, however, it was a distinct branch of medicine from that which was served by the surgeon and physician. The M.O.H. had to consider, "the causes of disease and the means of combating them rather than its symptoms and treatment, and the incidence of disease and death
230 upon multitudes rather than individuals." For this reason Whitlegge believed, "infection, disinfection, bacteriology and epidemiology are studies for the greater moment in preventive rather than curative
231 medicine". Throughout his handbook dependence upon studies of "the greater moment" for a re-interpretation of environmental health was in evidence.

The contributions of the military hygienists from Netley to the text-book literature of the 1890s was continued primarily through the combined efforts of John Lane-Notter and his assistant and eventual successor at Netley, Robert Firth. They edited the last edition of Parkes' Manual in 1891 and subsequently brought out a new text book of their own in 1894. The new text was still concerned with the sanitary conditions of the life of the soldier,

modelled on Parkes but substantially revised,
to include topics of civilian public health such²³²
as offensive trades and sanitary law.

During the 1890s there was a proliferation
of European text-books based on the English model
of practical instruction texts for students and
health officers. German publications such as that
of Flugge, Lehman, Rubner and Prausnitz were²³³
standard examples. The most extensive was however
the four volumed Handbuch der Hygiene by Weyl,
published between 1893 and 1901. The Handbuch
was a collection of articles by nearly all of the
leading European hygienists and many bacteriologists,²³⁴
such as Metchnikoff and Hueppe. The French
publications of the period were equally encyclopaedic
such as that by Rochard in 1897.²³⁵

The English authors, of course, were not the
only writers of hygiene text-books in the English
language. The American literature was too extensive
however for it to be discussed here with any minimum
degree of competence. Further, when considering
both the American and European literature in the
context of English hygiene it is difficult to
ascertain the influence of either, without knowing
first, the availability of the publications for
English students and practitioners. Some American
texts such as those of Rohé and Bergey were published
in both Philadelphia and London but the extent to
which they were made available for course curricula
remains undetermined.²³⁶

At the turn of the century some of the English authors of the 1890s were bringing out revised editions of their books after often extending them substantially in collaboration with a joint author. Louis Coultman Parkes, for example, co-operated with Corfield's successor at University College, Henry Kenwood in this way for the sixth edition of his book in 1901 and Arthur Whitlegge did so with George Newman to produce their standard text-book in 1905.²³⁷ Some authors continued alone though, such as Arthur Newsholme who re-wrote Hygiene completely²³⁸ in 1902. Both the 1901 edition of Parkes and Kenwood, and the 1902 edition of Newsholme included new sections on the explanation of the disease process of malaria. Both volumes referred to the latest work of Manson and Ross on the insect borne infectivity of the disease and Newsholme dealt with the role of insects in²³⁹ infectious diseases as whole. The work of Manson on malaria had been tentatively raised as an issue by Notter and Frith in 1896 under the²⁴⁰ editorial supervision of Manson himself. The relationship however of tropical disease and the development of hygiene was most clearly asserted through the career of Andrew Balfour, who wrote his first major work on hygiene, in conjunction with C. J. Lewis, when he was still serving as a medical officer during the war in South Africa²⁴¹ in 1901. Although Balfour took up his appointment

as the Director of the Wellcome Tropical Research Laboratories in 1902, the year his Hygiene volume was published, the text did not contain any discussion²⁴² of tropical diseases specifically. It did include however a chapter on parasitic diseases generally, and an account of the work of his close friend²⁴³ Patrick Manson and the work of Ronald Ross on malaria. Balfour's book did exemplify the way in which the structure of the hygiene text-book had changed. The subject matter was divided into five topics; medicine, general sanitation, sanitary engineering and building construction, vital statistics and sanitary law. Parkes' science of environmental contaminations had become, in Balfour, a much broader technology of prevention combining the application of the bio-medical sciences with engineering, administrative and statistical skills.

The technology of hygiene did not stand still, but extended its boundaries beyond those outlined by Balfour to include new responsibilities of preventive medicine by defining new areas of hygienic prophylaxis. The realm of personal hygiene was redefined in the text-books of the 1920s and '30s, replacing the culture of regimen with the social analysis of individual health. The individual was categorised in social classes for the purposes of prophylaxis and prevention was aimed at; the health of the school child, the welfare of the²⁴⁴ pregnant mother, maternal and infant mortality.

Balfour's text did mark a final stage in the development of 19th-century hygiene however. The social categorisation of individual health was not evident in hygiene text-books even at the end of the first decade of the twentieth-century. The primacy of preventing infectious disease remained the major theme, for example, even in Glaister's first edition²⁴⁵ published in 1910. There was little material here to aid M.O.H.s in their new responsibilities for the supervision of midwives or inspection of schools. At the turn of the century, the technology of hygiene was still preoccupied by the control of the physical environment of disease transmission, even though that environment had been redefined in terms of the bacteriology and chemical pathology of the disease process.

The new explanation of the disease process did bring about a significant change in the technology of hygiene. It revealed the interactive relationship between etiological origin and dissemination of infectious diseases. An interdependent system of prophylactic technology could be the only response to this interactive relationship. Parkes' science of environmental contaminations, directed prevention toward individual actions against water pollution, food adulteration, aerial impurity. The new chemical and biological explanation of the disease process was, by the 1890s, already instituting a comprehensive scope

to preventive medicine. The disparate elements of public hygiene during the 1860s were integrated into an interdependent system by the end of the 1890s. Hygienic prophylaxis of bacterial diseases could only be achieved through such a comprehensively planned approach. The extension of preventive medicine into the social categorisation of disease, during the 1920s and '30s, elaborated this comprehensive approach but had no need to initiate one of its own.

NOTES.

- 1: Cartari, Imagini Dei Dei, (Padua, 1615); Giustini Hygiea, (now in New York Metropolitan Museum) print taken from De Rossi Maffei, Racolta di Statue Autiche e Moderne, (1704), plate LXXXV
- 2: Karl Sudhoff, "The Hygienic Idea and Its Manifestations in World History." in Annals of Medical History, 1917-1918, Vol. 1, pp. 111-117
- 3: Henry Sigerist, "The Philosophy of Hygiene" in Bulletin of the Institute of the History of Medicine, Vol. 1, 1933, pp.323-331
- 4: L.J. Rather, "The Six Things Non-Natural: A Note on the Origins and Fate of a Doctor and Phrase." in Clio Medica, Vol. 3, 1968, pp.337-347; Saul Jarcho, "Galen's Six Non-Naturals a Bibliographic Note and Translation." in Bulletin of the History of Medicine, Vol. XLIV, 1970, pp.372-377; Peter H. Niebyl, "The Non-Naturals", Bulletin of the History of Medicine, Vol. XLV, 1971, pp.486-492.
- 5: Niebyl cites the work of James Mackenzie in 1758, for example, and the use of Mackenzie's ideas by Halle.
- 6: A. Newsholme, Hygiene and Public Health (London, Gill and Sons, 1902), p.3
- 7: William Thomas Sedgwick, Principles of Sanitary Science and Public Health - With Special Reference to the Causation and Prevention of Infectious Diseases. (New York, Macmillan, 1902), p.10

- 8.: E.H. Ackerknecht, "Hygiene in France, 1815-1848",
in the Bulletin of the History of Medicine, Vol.
22, 1948, p.117.
- 9: D.N.B. Vol.XX, 'Edmund Alexander Parkes(1819-1876),
pp. 294-296.
- 10: M. Pelling, Cholera, Fever and English Medicine
1825-1865. (Oxford, O.U.P. 1978), pp. 70-73.
- 11: Edmund Alexander Parkes, A Manual of Practical Hygiene,
(John Churchill, London, 1864), "Preface".
- 12: Ackerknecht, op.cit., pp.117-155; for further
discussion of Hygiene in France during this period see,
W.Coleman, Death is a Social Disease, (Wisconsin, the
University Press, 1982).
- 13: Ibid. p. 136.
- 14: See Chapter II, p . 109
- 15: Michel Lévy, Traité d'Hygiene, (Paris, Ballière
and Sons, 1844).
- 16: Ibid.
- 17: Lévy,(1862, 4th edition) Vol. II., p.450.
- 18: Ibid. (1862), pp. 451-456.
- 19: Ibid. p. 450.
- 20: Ibid. pp. 456-466.
- 21: Ibid. pp. 466-475.
- 22: Ibid. pp. 475.

- 23: Parkes, op.cit., (1864), p.xx.
- 24: E.A. Parkes, A Manual of Practical Hygiene,
(London, Churchill, 1873, 4th edition,) p.443.
- 25: Report of the Commissioners Appointed to Inquire
into the Regulations Affecting the Sanitary Conditions
of the Army, the Organisation of Military Hospitals
and the Treatment of the Sick and Wounded. (London,
Eyre and Spottiswoode, H.M.S.O., 1858). P.P. , 1857-58,
Vol. XVIII, pp.1-739; for Parkes evidence see, pp.24-
30.
- 26: Parkes, op.cit. (1873), pp.ix-x
- 27: Ibid. "Preface to the 4th edition.".
- 28: Ibid.,(1873), pp.1-89
- 29: Ibid., p.36
- 30: Ibid., p.36
- 31: Ibid., p.43.
- 32: For discussion of William Budd's work see,
M.Pelling,op.cit., pp.250-294
- 33: See reports by Buchanan and R.Thorne Thorne in
the Tenth Report of the Medical Officer to the
Privy Council,(with appendix) 1867, (London,Eyre
and Spottiswoode, H.M.S.O., 1868),pp. 28-33;
pp.34-41 and pp. 41-56.
- 34: Parkes, op.cit., (1873), pp.46-47.
- 35: See, J.Snow, Mode of Communication of Cholera (London
John Churchill, 1854; J.Snow, "On Continuous Molecular
Changes, More Particularly in their Relation to Epidemic
Diseases", The Oration at the 80th Anniversary of the
Medical Society of London(London, John Churchill,1853);
B.Ward Richardson and Wade Hampton, Snow on Cholera
(New York, The Commonwealth Fund, 1936); N. Longmate,
King Cholera The Biography of a Disease. (London, Hamish
Hamilton, 1966),pp.201-211, C.Rosenberg, The Cholera
Years (Chicago, and London, University of Chicago Press,
1962), pp.193-197.
- 36: Parkes, op.cit., (1864), pp.82-87 (1873), pp.37
- 37: Ibid.

- 38: Ibid., (1873), p.91
- 39: Ibid., (1873), pp.96-107
- 40: Ibid., (1873), pp.107-110
- 41: Parkes, (1864), op.cit., 86-87.
- 42: E.A. Parkes, A Manual of Practical Hygiene,
(London, Churchill, 1869, 3rd edition), p.98
- 43: Ibid., p.99; for Beale's disease theory itself
see, Lionel S.Beale, Disease Germs, Their Real
Nature. An Original Investigation. (London, John
Churchill and Sons, 1870)
- 44: Parkes, (1869), op.cit., pp.99-100
- 45: Parkes, (1873), op.cit., p.443
- 46: Ibid., (1873), pp.443-444
- 47: Ibid.
- 48: Ibid.
- 49: Ibid.p.445
- 50: Ibid., p. 448
- 51: Ibid., p. 454
- 52: Parkes, op.cit., (1864),p.86
- 53: Parkes, op.cit., (1869), p.99.
- 54: Parkes, op.cit. (1873), p.473.
- 55: Beale, op.cit.

- 56: Parkes, op.cit., (1873), p.475
- 57: Ibid. (1873), p.474
- 58: Ibid., (1873), p.474
- 59: Ibid. (1873), p.60
- 60: Ibid. (1873), p.475
- 61: Ibid.,(1873), p.475
- 62: Ibid., (1873), p.476
- 63: "Pangenesis : Darwin's term for the theory that within the germ of every living organism are contained the germs of all its future parts, and also the germs of all its descendants." definition from , The New Sydenham Society's Lexicon of Medicine and the Allied Sciences, (Based on Mayne's Lexicon), Vol . V, (London, New Sydenham Society, 1882)
- 64: Parkes, (1873), op.cit., p.476
- 65: Ibid., (1873), p.476
- 66: Ibid.
- 67: Pelling, op.cit. pp.76-79 and E. H. Ackerknecht, "Anticontagionism Between 1821 and 1867". in Bulletin of the History of Medicine, Vol. XXII, 1948, pp. 568-569.
- 68: Ibid., Ackerknecht, p. 569
- 69: Pelling, op.cit., pp.70-73.
- 70: Ibid. p.48.

- 71: Parkes, op. cit. (1873)
- 72: Ackerknecht, op. cit. p. 569.
- 73: O. Temkin, The Double Face of Janus, (Baltimore, Johns Hopkins, 1977), p. 427.
- 74: See, S.E. Finer, The Life and Times of Edwin Chadwick (London, Methuen, 1952), pp.156-163; for summary of Smith's theory of disease see, T. Southwood-Smith, A Treatise on Fever, (London, Longman 1830); see also Pelling, op. cit., pp. 20-24.
- 75: Donald G. Bates, Thomas Sydenham: The Development of His Thought 1666-1676. (Baltimore, Johns Hopkins University, unpublished Ph.D. thesis, 1975), pp. 62-102; see also, Kenneth Dewhurst, Dr. Thomas Sydenham 1624-1689, His Life and Original Writings, (London, Wellcome, 1966), pp. 60-65.
- 76: Ibid. Bates,
- 77: Temkin, op. cit., pp. 426-427.
- 78: Bates, op. cit. p.7.
- 79: Parkes, (1873), op. cit. p. 443.
- 80: See, Temkin, op. cit. p.85.
- 81: Baldwin Latham, Sanitary Engineering, (London, E. and F. N. Spon, 1874-1878).
- 82: J. D. MacDonald, A Guide to the Microscopical Examination of Drinking Water, (London, Crosby. Lockwood and Co. 1876).

- 83: A. Wynter Blyth, A Manual of Practical Chemistry: The Analysis of Foods and the Detection of Poisons. (London, Charles Griffin, 1879).
- 84: Henry J. Lanchester, How to Make a House Healthy and Comfortable, (London, Semkin Marshall, 1873); Eardley F. Bailey-Denton, A Hand Book of House Sanitation, For the Use of All Persons Seeking a Healthy Home, (London, Spon, 1882).
- 85: Douglas Galton, Observations on the Construction of Healthy Dwellings Namely Houses, Hospitals, Barracks, Asylums, Etc. (Oxford, Clarendon Press, 1880).
- 86: Francis Vacher, Defects in Plumbing and Drainage Work, (John Heywood, London, Manchester, 1889).
- 87: T. Pridgin-Teale, Dangers to Health, A Pictorial Guide to Sanitary Defects, (London, Churchill, 1879)
- 88: W. H. Corfield, The Treatment and Utilization of Sewage, (London, Macmillan, 1871, 2nd edition); and Louis C. Parkes and W. H. Corfield, Corfield's Treatment and Utilization of Sewage, (London, Macmillan, 1887).
- 89: George Wilson, A Handbook of Hygiene, (London, Churchill, 1873).
- 90: Ibid., p. 53.
- 91 Ibid., p. 280.
- 92: Ibid.
- 93: Alexander Wynter Blyth, A Dictionary of Hygiene and Public Health, (London, Charles Griffin, 1876).

- 94: Ibid.,p.314
- 95: Ibid.,p.659
- 96: Ibid.,p.202
- 97: Ibid.,p.202
- 98: George Wilson, Handbook of Hygiene and Sanitary Science, (Philadelphia, Blakiston and Son, 1886, sixth edition), pp. 379-406.
- 99: W. Bynum, "Darwin and the Doctors: Evolution, Diathesis and Germs in 19th-Century Britain." in Gesnerus, Vol. 40, 1983.
- 100: Wilson, op.cit. p.382
- 101: C.T.Kingsett, Nature's Hygiene: A Series of Essays on Popular Scientific Subjects, (London, 1880)
- 102: Albert Buck, (ed), A Treatise on Hygiene and Public Health <Vols.I - II> (New York, William Wood, 1879).
- 103: Dr. Professor Max Pettenkofer und Dr. Professor H. v. Ziemssen (eds) Handbüch der Hygiene und der Gewerbekrankheiten, (Liepzig, Verlag von F.C.W. Vogel 1882); C. Flugge, Lehrbüch der Hygienischen Untersuchungsmethoden (Liepzig, verlag von Veit & Comp 1881)
- 104: A.A. Proust, Traité d'Hygiene (Paris, 1881).
- 105: Francis S.B. François de Chaumont, Lectures on State Medicine Delivered Before the Society of Apothecaries, May and June 1875 (London, Smith, Elder and Co. 1875)
- 106: Ibid.,p.152
- 107: Ibid.,p.153

108: Ibid., p.166-169

426

109: Ibid.,p. 171-178

110: Francis S.B. François de Chaumont (ed), Parkes Practical Hygiene. (London and Philadelphia, Blaikston, 1887), p.156

111: Ibid.p.425

112: Parkes. op.cit.(1873), p.475

113: Edward Emanuel Klein and Henege Gibbes, Cholera: Inquiry by Drs Klein and Gibbes and Transactions of a Committee Convened by the Secretary of State for India in Council, 1885.

114: De Chaumont op.cit.(1887) ,p. 425.

115: Ibid. p.426

116: William Bulloch, The History of Bacteriology.(London O.U.P. 1938) p. 177.

117: Louis Coultman Parkes, Hygiene and Public Health(London Lewis, 1889) ,p. 371

118: Ibid. p.374

119: Ibid.pp.414-425

120: Alexander Wynter Blyth, A Manual of Public Health. (London, Macmillan, 1890),p.363

121: Ibid. p.366

- 122: Douglas Galton, "The Report on the Seventh International Congress of Hygiene and Demography" in C.E. Shelley, (ed), Transactions of the Seventh International Congress of Hygiene and Demography. (London, Eyre and Spottiswood 1892) Vol. 13, p.41
- 123: L.Landouzy, Le Professeur Paul Brouardel (La Séance d'Overture de la Cinquième . Conférence de l'Association Internationale Contre la Tuberculose, 1906)
- 124: Galton. op.cit. (1892), p.42
- 125: Ibid., pp.43-44
- 126: Vivian Poore and W.H. Corfield, "Report of the Secretaries", in Shelley, op.cit. Vol. 13, pp.45-51
- 127: Galton op.cit., p.44
- 128: Poore and Corfield. op.cit.p.49
- 129: Ibid.
- 130: The Lancet, 1887, Vol.II, p. 735 and p.837
-
- 131: C.E.Shelley, op.cit. (1892), Vols. I-13.
- 132: Poore and Corfield, op.cit, p.49
- 133: Sir Joseph Fayrer (1824-1907) served in India as

- 133: president of the Medical Board of the India Office between 1873-1895. He was made honorary physician to the Queen and Prince of Wales, on his return to England. D.N.B. Supplement I, pp. 17-18.
- 134: J.Fayrer, "Opening Address", in Shelley op.cit., Vol. I, p.29
- 135: Ibid. p. 31
- 136: Shelley, op.cit., Vol. I, pp.37-98.
- 137: Bulloch, op.cit., p.237
- 138: Ibid. pp.261-262.
- 139: Jules Bergeron, "The Spread of Diphtheria Throughout Europe During the Last Fifty Years", translation in Public Health The Official Organ of the Congress August 11th-17th, 1891, p.100; also in Shelley, (in French) op.cit. Vol. I, p.113.
- 140: Ibid. Public Health (1891), p.101; Shelley, Vol. I, pp.114-119.
- 141: Dr. Scrivens, "The Origin and Cause of the Spread of Diphtheria Infection." in Shelley, op.cit. Vol. I, pp.100-106; translation in Public Health (1891) op.cit. pp.97-98

- 142: S.W. Abbott, "Diphtheria in Massachusetts." in Shelley, op.cit., Vol I, p.120.
- 143: Charles E. Paget, "Local Examination of the Difference in Susceptibility to Diphtheria Between Old and New Residents." in Shelley, op.cit. Vol. I, pp. 152-160.
- 144: Ibid.p.154
- 145: Ibid.,pp. 158-160
- 146: The resolution passed by this section of the Congress emphasised the need for systematic inquiry into the causes and prevalence of diphtheria as outlined by Edward Seaton, in his paper presented on August 11th. See, Shelley, op.cit., Vol. I, pp.98-101
- 147: The B.M.J. 1891, Vol. II, p. 436; The Lancet, 1891, Vol. II, p.427.
- 148: Joseph Lister, "Opening Address" in Shelley, op.cit. Vol. 2, pp.91-10. For history of life and work of Lister see: R.J. Godlee, Lord Lister (Oxford, Clarendon Press, 1924); R.B. Fisher, Joseph Lister 1827-1912 (London, Macdonald and Jane's 1977)

- 149: For history of bacteriology during this period
see: W.Bulloch, op.cit. pp.176-203, pp.210-229;
D.Collar, The Development of Bacteriology (London,
Cambridge University Press, 1976); W.D. Foster,
A History of Medical Bacteriology and Immunology
(London, Heinemann Medical Books, 1970), pp.23-91;
P. Baldry, The Battle Against Bacteria, A Fresh Look
(London, C.U.P. 1976), pp. 37-47.
- 150: Elie Metchnikoff (Ilya Illich) (1852-1916), Dictionary
of Scientific Biography, (New York, Scibners, 1974), Vol. 9
pp. 331-335; see also, Olga Metchnikoff, Vie d'Elie
Metchnikoff, 1845-1916 (Paris, 1920); P. Lepine, Elie
Metchnikoff et Immunology. (Vichy, 1966); Besredka,
Histoire d'un Idée Louvre des Metchnikoff (Paris, 1921).
- 151: Bulloch, loc. cit.; and Foster, op.cit., pp.101-105;
see also, Shibasaburo Kitasato (1852-1913), D.S.B.
Vol. 7, p.391; Emile Von Behring (1854-1917), D.S.B.
Vol. 2, pp. 574-578.
- 152: Emile Roux, "De l'Immunité: Immunité Aquisse et
Immunité Naturelle." in Shelley op.cit. Vol. 2,
pp.110-124.
- 153: Hans Buchner, "Uber Immunitat, Deren Naturliches
Vorkomen und Kunstliche Erzeugung." in Shelley op.cit.
Vol. 2, pp. 124-145.

- 154: Ernest Hanbury Hankin (1865-1939), J.A. Venn,
Alumini Cantabrigienses. (London, C.U.P. 1947)
Part 2, Vol. 2, p.226.
- 155: E.H. Hankin, "Report on the Organism and the
Microbe" in the B.M.J. 1890, Vol.I, pp.65-68;
"On the Nature of Fibron Ferment" in the Journal
of Physiology, Vol. 9, 1888, p.229. For discussion
of Hankin's work with Sidney Martin presented to the
Royal Society in May 1890 see, Sheriden Delepine,
"Letter to the Editor", B.M.J. 1890, Vol.II, p.1198.
- 156: E.H. Hankin, "On Immunity", in Shelley, op.cit.
Vol. 2, pp.145-152.
- 157: Elie Metchnikoff, "Discussion on the Immunity Debate"
in Shelley, op.cit. Vol. 2, p.184
- 158: Ibid.
- 159: Henry Roscoe (1833-1915) was Professor of Chemistry
at the Medical School, Owens College, Manchester from
1859 until 1885 when he was elected to Parliament
and later became the Vice Chancellor of London
University, in 1895, See, D.N.B Supplement, 1912-1921,
p. 478-479
- 160: H. Roscoe, "Opening Address" in Shelley, op.cit., Vol. 5,
pp.9-10.

- 161: Ibid., p.9
- 162: see Shelley, op.cit., Vol. 5,
- 163: Ibid. Shelley, Vols. 6, and 7.
- 164: Ibid. Shelley, Vol. 3
- 165: Dr. Simon, " The Formation and Organisation of Local
Boards of Health."
in Shelley, op.cit., Vol. 9, pp.11-14.
- 166: Ibid.
- 167: Ibid., p.13. For further discussion by Willoughby
see; Handbook of Public Health and Demography (London,
Macmillan, 1893)
- 168: H. Tomkin, " Should the State Undertake Scientific
Investigations into the Origin and Causes of Disease?"
in Shelley op.cit., Vol. 9, p.29.
- 169: Ibid. p.30
- 170: Ibid. p.32.
- 171: Almroth Wright, "On Wooldridge's Method of Producing
Immunity Against Anthrax by the Injection of Solutions
of Tissue-Fibrinogen." in Shelley, op.cit., Vol. 2,
pp.164-171.

- 172: Almroth Wright, "Should the State Undertake the Support of Laboratories for the Investigation of Disease?" in Shelley, op.cit., Vol. 9, pp.32-36.
- 173: Z.Cope, Almroth Wright, Founder of Modern Vaccine Therapy. (London, Nelson, 1966), p.96; Hariette Chick et al. War On Disease, A History of the Lister Institute. (London, Andre Deutsch, 1971), pp.28-30.
- 174: Chick, op.cit., pp.19-27
- 175: Cope, op.cit., pp.97-102; see also Leonard Colebrook, Almroth Wright Provocative Doctor and Thinker (London, Heinemann Medical Books, 1954), pp.138-160.
- 176: For bibliographical survey of Wright's work see Leonard Colebrook, Bibliography of the Published Writings of Sir Almroth E. Wright, (London, Heinemann, 1952)
- 177: Wright, op.cit. in Shelley, Vol. 9, pp.32-33.
- 178: Ibid. p.34
- 179: Ibid., pp.35-36.
- 180: Shelley, Vol. 9, pp.38-241
- 181: Galton, op.cit. in Shelley, Vol. 8, p.11
- 182: Ibid.

- 183: George Wilson, Handbook of Hygiene and Sanitary Science (London, Churchill, 1892), p. vii.
- 184: For contributions of Sykes to the Congress see Shelley, op.cit., Vol. 2, p.16, p.42, pp.102-123, and p.156.
- 185: John F. Sykes, Public Health Problems (London, Scott, 1892), pp. iv-ix
- 186: Ibid., pp.1-5
- 187: Ibid., p.6
- 188: Ibid.
- 189: Ibid.
- 190: Ibid.
- 191: Ibid., p.7.
- 192: Ibid.
- 193: Ibid., pp.18-115
- 194: Ibid., pp.186-190
- 195: Newsholme, op.cit. (1892)
- 196: Shirley Foster Murphey and Thomas Stevenson (eds), A Treatise on Hygiene and Public Health. Vols. I-III. (London, Churchill, 1892)
- 197: Ibid. Vol. I, "Preface"
- 198: Ibid., p.vii
- 199: For life of Spencer-Wells see, John A Shepherd, Thomas Spencer Wells (1818-1890) The Life of a Victorian Surgeon, (Edinburgh and London, Livingstone 1965), service with Parkes at Renkoi, pp.27-34.

- 200: J. Lane-Notter (1843-1923), B.M.J., 1923, Vol. II, pp.843-844.
- 201: James Lane-Notter, "Air" in Stevenson and Murphey op.cit.,Vol. I, pp. 4-30.
- 202: Thomas Stevenson, "Water" in Stevenson and Murphey, op.cit.,Vol.I, pp.267-272
- 203: W.M. Copeman,"On the Influence of Soil on Health" in Stevenson and Murphey, Vol.I,pp. 41-46.
- 204: Ibid.pp.351
- 205: Sidney Martin, "Food" in Stevenson and Murphey, op.cit., Vol. I, pp. 391-491; for general discussion of Sidney Martin's work see, N. Morgan,"S.H.C. Martin, 1860-1924, F.R.S. Poisonous Proteins and Medical Biochemistry in Britain at the End of the 19th-Century." (unpublished paper, forthcoming in Medical History,1984); and N.Morgan,"Pure and Applied Science. The Impact of Bacteriology on Chemical Physiology at the Turn of the Century." (paper given at the Conference of Biotechnology, Long Term Development of the European Association for the Study of Science and Technology, March 30th-April 1st 1984.); also, for discussion of context in which chemical physiology and biochemistry flourished during this period in England see, R.E. Kohler, From Medical Chemistry to Biochemistry (Cambridge, C.U.P. 1982) pp. 40-72; and N. Morgan, The Development of Biochemistry in England Through Botany and the Brewing Industry. 1840-1890.(London, University College, PhD Thesis,1982)
- 206: Ibid. Martin, in Stevenson and Murphey,p.448.

- 207: Edward Klein, "On the Pathology and Etiology of Infectious Disease" in Stevenson and Murphey, Vol. 2, pp. 3-240
- 208: Ibid. Klein, p.3
- 209: Ibid.,p.5
- 210: Ibid.
- 211: Ibid.,pp.6-10, p.16, p.23,p.27,p.64.
- 212: Ibid.,p.34
- 213: Ibid.
- 214: Bulloch, op.cit.,p.376,Edward Klein (1844-1925).
- 215: See Klein and Gibbes op.cit.(1885); see also, Wilson and L.C. Parkes, op.cit.
- 216: Klien, op.cit. in Stevenson and Murphey Vol.2, pp. 172-187
- 217: Ibid.,pp.46-50, and pp.64-78.
- 218: Ibid.,pp.50-58
- 219: Stevenson and Murphey, op.cit. "Preface", Vol. I.
- 220: T.W. Thompson, "The Natural History of Infectious Diseases" in Stevenson and Murphey, Vol. 2,pp. 241-400.
- 221: Ibid.,p.244
- 222: Ibid.,p.250
- 223: Ibid.
- 224: Ibid.
- 225: Ibid.,p.257

- 226: A.W. Blyth, Lectures on Sanitary Law. (London, Macmillan, 1893).
- 227: Ibid., pp.81-112.
- 228: A.B. Whitelegge, Hygiene and Public Health (London, Cassell, 1890).
- 229: Ibid., p.1.
- 230: Ibid.
- 231: Ibid., p.2
- 232: J.L. Notter and R. Firth, Hygiene (London, Longmans and Green, 1894).
- 233: K. Flugge, Grundriss der Hygiene (Leipzig, 1891); Max Rubner, Lehrbuch der Hygiene. Systematische Darstellung der Hygiene und ihrer Wichtigste Untersuchungs-Methoden. (Leipzig und Wein, 1890); K.B. Lehman, Method of Practical Hygiene. (Berlin, 1890); W. Prausnitz, Grünzüge der Hygiene Für Studierende an Universitäten und Technischen Hochschulen . . . , Aerzte, Architekten und Ingenieure (Munich und Leipzig, 1892).
- 234: M.T. Weyl, Handbuch der Hygiene (Verlag Von Fisher, Jena, Vols. I-IX , 1893-1896.).
- 235: J.E. Rochard (ed) Encyclopédie d'Hygiene et Médecine Publique (Paris, 1890-1897).
- 236: George Rohé, Text-Book of Hygiene. A Comprehensive Treatise on Principles and Practice of Preventive Medicine from an American Standpoint. (London and Philadelphia, Davies, 1890); D.H. Bergey, The Principles of Hygiene. A Practical Manual for Students Physicians and Health Officers. (Philadelphia and London, Saunders, 1901-1909.).

- 237: L.C. Parkes and H. Kenwood, Hygiene and Public Health(London Lewis, 1901-1907); A. Whitlegge and G. Newman, Hygiene and Public Health(London, Cassell, 1904).
- 238: Newsholme,op.cit. (1902).
- 239: Parkes and Kenwood, (1901) op.cit; Newsholme,(1902), op. cit.,pp.281-283.
- 240: Notter and Firth, op.cit.,pp. 670-673.
- 241: C.J.Lewis and Andrew Balfour, Public Health and Preventive Medicine (Edinburgh, William Green, 1902).
- 242: Andrew Balfour (1873-1931), D.N.B. Supplement 1931-1940 , pp.33-34 .
- 243: Balfour and Lewis,op.cit. pp. 47-55. For histories of the work of Patrick Manson and Ronald Ross see: Philip H. Manson-Bahr and A. Alcock, The Life and Work of Sir Patrick Manson (London, Cassell, 1927); J.O. Dobson, Ronald Ross (Student Christian Movement, London, 1934); John Rowland, The Mosquito Man. The Story of Sir Ronald Ross (London, Lutterworth,1958); B.E. Beaumont, Sir Ronald Ross a Bio-Bibliography (Belfast, M.A. Thesis. Vols. I-III, 1974).
- 244: W.W.Jameson and F.T. Marchant, Synopsis of Hygiene (London, Churchill, 1920); J.R.Currie, A Textbook of Hygiene, (Edinburgh, Livingstone, 1930).
- 245: John Glaister, A Text -Book of Public Health(Edinburgh, Livingstone,1910).

CONCLUSION.

1888 was a significant year for the development of preventive medicine. That year the Local Government Act turned the registrable qualification of the D.P.H. into an exclusive licence to practise. During this year, prevention graduated from a specialism into a separate profession of medicine.

The professional organisation of preventive practitioners responded to this development when, in 1889, the individual associations of M.O.H.s amalgamated into a national society. For the first time the preventive medical profession consolidated its identity and possessed a vehicle for collective action.

Subsequently the Society of Medical Officers of Health acted in the interests of both metropolitan and provincial members, with a primary aim of promoting the full-time, securely tenured officer. The occupational status of this officer was maintained through scarcity of his specialised labour. In achieving this the Society had an ally in the General Medical Council. The actions of the Council from 1889 onward, increasingly secured a restrictive entrance and high educational standard of the licence itself.

The contractual terms of this occupation which the Society wished to promote for the M.O.H. were those of a civil servant, in the employment of a local authority,

but receiving his authority from a central state department. Upon these crucial terms, however, depended not only the occupational function of the M.O.H. but the whole system of preventive health care envisaged by the profession. The Society, or at least its central managerial caucus, held their own image of a projected future for the relationship between medicine and the state. Municipal health care, organised on the principles of prevention, controlled by the existing agencies of public health was a vision which M.O.H.s shared with others. The campaign against destitution was a broader one, but was based upon the same essential priority of prevention above cure. This vision, however, received an almost fatal blow in 1911, when state insurance usurped municipal socialism as a means of organising social welfare.

The national insurance movement was not the only opposition encountered by the preventive revolution. The context of hostility to preventive medicine has not been dealt with here, but it was effective to some degree. The anti-vaccination campaign had, since the middle of the century, been a formidable social protest against the compulsion of the state overriding the sovereignty of the individual to contract, die of and spread epidemic disease.¹ In a similar way, the anti-vivisection movement had attempted to undermine the very means by which prevention gained its legitimation. Restraint upon the development of experimental physiology was equally

an indirect attack upon the preventive cause.² The Congress of Hygiene, in 1891, was therefore a supportive and sympathetic platform for Almroth Wright's demands for research funding and vivisectionist views.³

What has been examined here is that the preventive revolution was not legitimated by social consensus but by the power of scientific authority. This was a revolution within the medical profession itself in which, as Arthur Whitelegge pointed out, experimental physiology became appropriated by both preventive and curative medicine.⁴ The new medical biology and chemistry of the 1890s were firmly incorporated into the professionalisation of prophylaxis. On the basis of the bacteriological explanation of the disease process hygiene technology emerged as an interdependent prophylactic system. This comprehensive approach extended, in the view of some, to a system of planning for health which even the mainstream of the profession disputed.⁵ Racial construction of the future nation state seemed, from the point of view of the M.O.H. , to contradict the principle of preventing unnecessary death and morbidity amongst both the robust and the feeble in the great bacteriological chain of infection.⁶ Had the eugenic view predominated, a real revolution in social medicine might have then occurred in England, but of a different character entirely.

As it was, England underwent not so much a revolution as a continuing, incremental change in the public health system throughout the second half of the 19th-century. The last decade of the old century and the first decade of the new did, however, witness an important feature of this development. These were significant years within the medical profession itself which would have consequences for the provision of health care in the future. The emergence of a new medical profession meant that there could no longer be one view as to how health could most effectively be secured. The community and the individual represented different medical interests subsequently, each with its own aims and objectives. To what extent these were complemented by, or in conflict with one another was only initially reflected in the events of 1911. The drama was to become clarified in the circumstances leading up to the creation of the first ministry of health, and later in the creation of a national health service. These developments and the role played by preventive medical interests are a sequel to the story told here, and the subject of future research.

NOTES.

- 1: B.J. Stern, Should We Be Vaccinated? A Survey of the Controversy and its Historical and Scientific Aspects. (London, Harper and Brothers, 1927), pp.61-83; R. Lambert, Sir John Simon 1816-1904, (London, Macgibbon, and Kee, 1963), pp. 253-257, pp.391-394, pp.437-447, pp.563-567. For history of vaccination itself see, Peter Razzell, The Conquest of Smallpox, (Sussex, Caliban Books, 1977) and J.M. Lane et al, "Razzell and Jennerian Vaccination" in Bulletin of the History of Medicine, 1981, Vol. 55, pp. 272-276.
- 2: Richard D. French, Antivivisection and Medical Science in Victorian Society. (London, Princeton, 1979), pp.46-68; see also, E. Westacott, A Century of Vivisection and Anti-Vivisection, (Essex, Daniel, 1947); J. Turner, Animals, Pain and Humanity in the Victorian Mind: Reckoning with the Beast (London and Baltimore, The Johns Hopkins Press, 1980); F.W. Loew, "Animal Experimentation" in The Bulletin of the History of Medicine, 1982, Vol. 56, pp.123-126.
- 3: A.Wright, op.cit. in Shelley, Vol.2 1891, (see Chapter 5, pp.391-393)
- 4: Whitelegge, op.cit. (see Chapter 5, p. 412)
- 5: Barr, op. cit. (see Chapter 4, pp.303-304)

- 6: Editorial, in Public Health, Vol. VI, 1893-1894, p.225; J.F.J. Sykes, "Darwinism and Race Progress, A Criticism." in Public Health, Vol. VI, 1893-1894, pp.260-261.

BIBLIOGRAPHYSociety of Medical Officers of Health:Minutes, 1856 -1858Minutes, General Purposes Committee, 1859-1873Minutes of Council, 1873-1911.Minutes, Finance, Publications, Parliamentary, and other
Committees, 1892-1902Minutes, Ordinary Meetings, 1889-1911, (reproduced and
published in the Society's journal, Public Health) .County Officers Association, Minutes, 1902-1907Pelling M. Handlist of Records of the Society of Medical
Officers of Health, (Oxford, Wellcome Unit Research
Publications , III, 1980)Parliamentary Papers and Official Documents:Metropolis Local Management Bill [18 Vict.], P.P.,
1854-1855, Vol. IVReport of the Commissioners Appointed to Inquire
into the Regulations Affecting the Sanitary Conditions
of the Army, the Organisation of Military Hospitals
and the Treatment of the Sick and Wounded, (London,
Eyre and Spottiswoode, H.M.S.O. 1858), P.P., 1857-
1858, Vol. XVIIIFirst Report of the Royal Sanitary Commission, Minutes
of Evidence. P.P., 1868-1869, Vol. XXXII .Report of the Royal Commissioners Appointed to Inquire
into the Medical Acts with Evidences, Appendix and Index,
(H.M.S.O. C.3259-1, 1882)

Medical Act, 1886, [49 and 50, Vict. Ch.48]

Local Government (England and Wales) Bill, as Amended in Committee [51 and 52 Vict.] [Bill 338], P.P., 1888, Vol. IV

Infectious Diseases Bill, 1889, P.P., 1889, Vol. III

Sale of Food and Drugs Act(1875), Amendment Act 1891, P.P. 1890-91, Vol.IX

Public Health (London) Law Amendment Bill [54 Vict.], P.P. 1890-91, Vol. VIII

Report of the Royal Commission on the Poor Laws and Relief of Distress. Appendix. (London, H.M.S.O., 1909, Cd. 4573, 1909xlii), P.P. 1909,Vol. XIV, J.C. McVail, Report on the Methods and Results of the Present System of Administering Indoor and Outdoor Relief in Certain Unions in England and Wales.

Tenth Report of the Medical Officer of the Privy Council 1867 (London, Eyre and Spottiswoode, H.M.S.O., 1868), Appendix, R.Thorne-Thorne, "Report on Typhoid Fever in Winterton."; G.Buchanan, " Report on Typhoid Fever in Guilford"; R.Thorne-Thorne,"Report on Typhoid Fever at Terling".

Twelfth Report of the Medical Officer of the Privy Council 1869, (London, Eyre and Spottiswoode, H.M.S.O., 1870), Appendix, J.B. Sanderson, "On the Intimate Pathology of Contagion."

Thirty-Fifth Annual Report of the Local Government Board, 1905-1906,[Supplement in continuation of the report of the Medical Officer for 1905-1906], H.Timbrell-Bulstrode, "Report on Sanatoria for Consumption and Certain Other Aspects of the Tuberculosis Question."

The General Council of Medical Education and Registration,
Minutes of the General Council and its Executive
Committee, 1868 - 1901, Vols. VI - XXXVIII

Hansard, Parliamentary Debates, Commons, Vol. CCX and
Fourth Series Vol.103, (London, Cornelius Buck)

Journals.

The British Medical Journal

Journal of the Royal Institute of Public Health

The Journal of the Sanitary Institute

The Lancet

The Medical Times Gazette

Public Health

Public Health Official Organ of the Seventh Congress
of Hygiene and Demography (Daily issue August 11th-
17th, 1891)

Transactions of the Epidemiology Society (of London)

Transactions of the National Association for the
Promotion of Social Science

Transactions of the Sanitary Institute

Transactions of the Seventh International Congress
of Hygiene and Demography, 1891, Vols. I - XIII

Primary Sources:

- Abbott S. W. "Diphtheria in Massachusetts." in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. I.
- Adams F. "The Status, Remuneration and Tenure of office of Medical Officers of Health." in Public Health, Vol. 6, 1893-1894.
- Annis E.G. "Serum Therapy in Relation to Public Health." in Public Health, Vol. 12, 1899-1900.
- Atlay J.B. Henry Acland, Regius Professor of Medicine in the University of Oxford. A Memoir. (London, Smith and Elder, 1903)
- Barnes R. "On the Relations Between Medicine, Surgery and Obstetrics in London." in American Journal of Obstetrics and Diseases of Women and Children 1884, Vol XVII, No.8.
- Barr J. "Preventive Medicine, The Medicine of the Future." in, Journal of the Royal Institute of Public Health. 1907, Vol. XV.
- Beale L.S. Disease Germs, Their Real Nature. An Original Investigation. (London, John Churchill and Sons, 1870)
- Bergeron.J. "The Spread of Diphtheria Throughout Europe During the Last Fifty Years." in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. I.
- Bergey D.H. The Principles of Hygiene. A Practical Manual for Students, Physicians and Health Officers. (Philadelphia and London, Saunders, 1901- 1909)

Blyth Winter A. A Dictionary of Hygiene and Public Health. (London, Charles Griffin, 1876)

A Manual of Practical Chemistry. The Analysis of Foods and the Detection of Poisons. (London, Charles Griffin, 1879)

"The Local Government Bill for England and Wales." in Public Health, Vol.I, 1888-1889.

A Manual of Public Health, (London, Macmillan, 1890)

"The Prevention of Infectious Diseases." in Transactions of the Sanitary Institute, 1890-1891.

Lectures on Sanitary Law. (London, Macmillan, 1893)

Bond F. "The Local Govenment Act in Its Sanitary Aspects." in Public Health, Vol. I, 1888-1889

Brown. G.F. The Lives of the Fellows of the Royal College of Physicians of London, 1826-1925; Munk's Role, IV , (London, Routledge Kegan and Paul, 1955)

Buchner H. "Über Immunität Deren Naturliches Vorkomen und Kunstliche Erzenngung" in Transactions of the Seventh International Congress of Hygiene and Demography. 1891, Vol.2, (translation in Public Health the Official Organ of the Congress, August. 11th -17th 1891)

- Buck A. (ed) A Treatise on Hygiene and Public Health
<Vols I and II>, (New York, William
Wood, 1879)
- Caldwell R. "Economic Aspects of Tuberculosis" in
The Journal of the Royal Institute
of Public Health, 1909, Vol. XVII
- Cartari Imagini Dei Dei, (Padua, 1615)
- Chadwick E. "Progress of Sanitation: Preventive
as Compared with that of Curative
Science." in Transactions of the
National Association for the
Promotion of Social Science, 1881.
- de Chaumont F.S.B.F. Lectures on State Medicine,
Delivered Before the Society
of Apothecaries, May and June
1875, (London, Smith, Elder &
Co. 1875)
- Parke's Practical Hygiene
(London, and Philadelphia,
Blaisdell, 1887)
- Churchill J & A The London and Provincial Medical
Directory for England and Wales.
Vols. 1856-1900
- Copeman W.Monkton- "On the Influence of Soil on
Health." in T.Stevenson and
S.F. Murphey (eds) A Treatise
on Hygiene and Public Health,
<Vols. I-III> (London, Churchill,
1892)
- Corfield W. H. The Treatment and Utilization of
Sewage. (London, Macmillan, 1871;
later edition written together with
L.C. Parkes, 1887)

- Cornish W.R. "The College of State Medicine." in Public Health Organ of the Congress of Hygiene and Demography 1891.
- Crawford T. "The Position of Medical Officers of Health in Regard to the Administration and Working of the Infectious Diseases Notification Act." in the Journal of the Sanitary Institute 1895-1896, Vol. XVI,
- Crookshank E. "A History of the Germ Theory of Disease." in Public Health 1888-1889, Vol. I
- Currie J.R. A Textbook of Hygiene, (Edinburgh, Livingstone 1930)
- Delepine S. "Bacteriological Diagnosis in Connection with Public Health Work." in the Journal of the Sanitary Institute 1898.
- "On the Value of Experimental Diagnosis in Tuberculosis." in B.M.J. 1893, Vol. I
- Bailey E.F. Denton- A Handbook of House Sanitation for the Use of All Persons Seeking a Healthy Home. (London Spon, 1882)
- Dudfield R. History of the Society of Medical Officers of Health, (London, Jubilee Number of Public Health, edited by F.J. Allan, 1906)
- Dudfield T.O. "Memorandum on the Tenure of Office of Medical Officers of Health." in Public Health, Vol. 8, 1895-1896.

- Duffy C.F. "First Report of the Public Health Committee on the Inspection of the Examinations in Sanitary Science of the Universities and Licensing Bodies of the United Kingdom." in, G.M.C., Minutes, XXXIII, 1895, Appendix, XI.
- Ewart J. "Inaugural Address", in, Transactions of the Epidemiological Society N.S. Vol. X, 1890-1891.
- "Presidential Address", in Transactions of the Epidemiological Society N.S. 1891-1892, Vol. XI.,
- Fayrer J. "Opening Address" , in , Transactions of the Seventh International Congress of Hygiene and Demography. Vol. I, 1891
- Flugge C. Lehrbuch der Hygienischen Untersuchungsmethoden, (Liepzig, verlag von Viet & Comp, 1881)
- Galton D. Observations on the Construction of Healthy Dwellings Namely Houses, Hospitals, Barracks, Asylums etc. (Oxford, Clarendon Press, 1880)
- Garstang T.W.H. "Security of Tenure for Medical Officers of Health." in Public Health, Vol. XII 1899-1900.
- Glaister J. A Textbook of Public Health, (Edinburgh, Livingstone, 1910)
- Gulpin E.G. "Garden Cities as a Solution of the Housing Problem." in Journal of the Institute of Public Health. 1909, Vol. XVII.

- Gunston D. Michael Faraday. Father of Elect-
ricity. (London, Longmans and Green,
1870)
- Hankin E.H. "On the Nature of Fibron Ferment."
in, Journal of Physiology, 1888, Vol.
9.
- "Report on the Organism and the
Microbe." in, the B.M.J., 1890,
Vol. I.
- "On Immunity." in, Transactions of
the Seventh International Congress
of Hygiene and Demography, 1891,
Vol. 2.
- Highet J. "The Need for A State Department of
Public Health." in Public Health,
1899-1900, Vol. XII.
- Hill A. "Presidential Address", in, Public
Health, Vol. I, 1888-1889
- Hill T. Eustace- "Insecurity of Tenure of Officers
of Health." in Public Health,
1892-1893, Vol. 5
- Harley V.&Goodbody F.(eds) Report of the Department of
Pathological Chemistry of
University College London.
 <New Series>, 1896-1902
- Horsley V. "Annual Reports to the Committee
of the Brown Institution, 1886-1889"
in Minutes of the Senate, 1886-1889,
University of London.

- Horsley V. & Harley V. (eds) The Report of the Department of Pathology of University College London, Vols. 1-5, 1892-1895
- Hunter W. L. "A Few Public Health Possibilities.", in Public Health, 1898-1899, Vol. XI.
- Jameson W.W. and Marchant F.T. Synopsis of Hygiene, (London, Churchill, 1920)
- Jones H. Bence- Henry Bence-Jones M.D. F.R.S. 1813-1873, An Autobiography with Elucidations at Later Dates, (London, Crusha and Sons, 1929)
- Kerr J. "The Future Medical Oversight of Elementary Schools." in Public Health, Vol. 18, 1905-1906
- Kings College, London. Calendars, 1892-1898, (London)
- Kingsett C.T. Nature's Hygiene A Series of Essays on Popular Scientific Subjects, (London 1880)
- Klein E. "On the Pathology and Etiology of Infectious Disease". in T. Stevenson and S.F. Murphey, A Treatise on Hygiene and Public Health, (London, Churchill, 1892) Vol. 2.

- Klien E. and Gibbes H. Cholera: Inquiry by Drs Klien and Gibbes and Transactions of a Committee Convened by the Secretary of State for India in Council 1885
- Lanchester H.J. How to Make A House Healthy and Comfortable (London, Semkin Marshall, 1873)
- Landouzy L. Le Professeur Paul Brouardel (~~la~~ Seance d'Overture de la Cinquiemme Conference de l'Asociation Internationale Contre la Tuberculose, 1906)
- Lathum B. Sanitary Engineering (London, E. and F.N. Spon, 1874-1878)
- Lehman K.B. Method of Practical Hygiene (Berlin, 1890)
- Lewis C.J. and Balfour A. Public Health and Preventive Medicine (Edinburgh, William Green, 1902)
- Lister J. "Opening Address", in, Transactions of the Seventh International Congress of Hygiene and Demography 1891, Vol. 2
- Maffei, -de Rossi Racolta Di Statua Autiche & Moderne, (1704)
- Manley H. "The Society of Medical Officers of Health: Its Aims, Objects and Policy." in Public Health Vol. 10, 1897-1898

- Mapother E.D. The Medical Profession and its Educational Licensing Bodies
(Dublin, Fannin and Col. 1868)
- Martin S. "Food", in T.Stevenson and S.F. Murphey, A Treatise on Hygiene and Public Health, (London, Churchill, 1892), Vol. I
- May H. "The Isolation of Infectious Disease in Hospitals." in Public Health Vol. 2, 1889-1890
- "The Status, Remuneration and Tenure of Office of Medical Officers of Health", in Public Health Vol. 6, 1893-1894
- Metchnikoff E. "Discussion on the Immunity Debate", in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol.2
- Munro A. Campbell- "Presidential Address to the Annual Provincial Meeting of the Society of Medical Officers of Health 1897." in Public Health 1898-1899, Vol. XI.
- Newsholme A. "The Children's Charter of Health." in Public Health, Vol. 20, 1907-1908
- "Some Conditions of Social Efficiency in Relation to Local Adminstration." in Journal of the Royal Institute of Public Health. 1910, Vol. XVIII

- Niven J. "On the Prevention of Tuberculosis" in, The Medical Chronicle, Vol. 6, 1896
- "The Midwives Act 1902", in Public Health, 1906, Vol. 17.
- "On the Communicability of Phthisis." in Public Health, Vol. 21, 1908
- Observations on the History of the Public Health Effort in Manchester (Manchester, Heywood, 1923)
- Notter J. Lane- "Air", in T. Stevenson and S.F. Murphey, A Treatise on Hygiene and Public Health, (London, Churchill 1892), Vol. I
- Notter J. Lane- Firth R. Hygiene, (London, Longmans and Green, 1894)
- Nuttall G. "The Training and Status of Public Health Officers in the United Kingdom" (Pamphlet. London School of Hygiene and Tropical Medicine 1912)
- Page H. "Injustices to Medical Officers of Health Under Our Existing Sanitary Organisation." in Public Health Vol. 2, 1889-1890
- Paget C.E. "Local Examination of the Difference in Susceptibility to Diptheria Between Old and New Residents." in Transactions of the Seventh International Congress of Hygiene and Demography 1891 Vol. I.

- Paget C.E. "Some Imperfections of Public Health Administration" in Transactions of the Sanitary Institute 1894-1895, Vol. XV
- Pakes W. "The Application of Bacteriology to Public Health.", in Public Health 1899-1900, Vol. XII
- Parker B. and Unwin R. "Town Planning and Housing." in Journal of the Royal Institute of Public Health, 1909, Vol. XVII
- Parkes E.A. A Manual of Practical Hygiene, (London, John Churchill, 1st Edition 1864, 3rd Edition 1869, 4th Edition 1873)
- Parkes L.C. Hygiene and Public Health (London, Lewis, 1889)
- Jubilee Retrospect of the Royal Sanitary Institute 1876-1926 (London, The Sanitary Institute, 1926)
- Parkes L.C. & Kenwood H. Hygiene and Public Health (London, Lewis, 1901-1907)
- Pavy F.W. "On Experimental Glycosuria." in the B.M.J., 1901, Vol. II
- Researches on the Nature and Treatment of Diabetes. (London, Churchill, 1869)
- Power, Sir D'Arcy, & Spencer W.G. Plarr's Lives of the Fellows of Royal College of Surgeons of England. <Vols. I and II> (London Royal College of Surgeons 1930)

- Ransome A. "The Training and Qualification of Medical Officers of Health." in Public Health Vol. 6, 1893-1894
- Richards H. Meredith- "The National Insurance Bill" in Public Health, Vol. 24, 1910-1911
- Richardson B. Ward The Future of Sanitary Science (London, Macmillan, 1877)
- Rohé G. Text-Book of Hygiene. A Comparative Treatise on Principles and Practice of Preventive Medicine from an American Standpoint (London, Philadelphia, Davies, 1890)
- Roscoe H. "Opening Address." in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. 5.
- Roux E. "De l'Immunité: Immunité Acquise et Immunité Naturelle." in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. 2
- Royal College of Physicians of London and the Royal College of Surgeons England, <Conjoint Examining Board> The Papers for the Examination for the Diploma in Public Health, 1887-1911.
- Rumsey H.N. Essays on State Medicine (London, Churchill, 1856)
- Sanderson Lady Burdon- Sir John Burdon Sanderson, A Memoir, (Oxford, The Clarendon Press, 1911)

Scrivens Dr.

"The Origin and Cause of Spread of Diphtheria Infection." in ,
Transactions of the Seventh
International Congress of
Hygiene and Demography, 1891,
Vol. I

Seaton E.

"Should Medical Officers of Health Engage in Private Practice?"
in, Public Health, 1893-1894

"Medical Societies and the Public Health Service." in
Public Health, 1897-1898, Vol.
X.

Sedgwick W.T.

Principles of Sanitary Science
and Public Health With Special
Reference to Causation and
Prevention of Infectious Diseases.
(New York, Macmillan, 1902)

Simon Dr (Breslau)

"The Foundation and Organisation of Local Boards of Health." in
Transactions of the Seventh
International Congress of Hygiene
and Demography, 1891, Vol. 9

Simon J.

English Sanitary Institutions
(London, Paris, New York and
Melbourne, Castle and Co., 1890)

Snow J.

Mode of Communication of Cholera
(London, John Churchill, 1854)

"On Continuous Molecular Changes, More Particularly in Their Relation to Epidemic Diseases." in The
Oration at the 80th Anniversary
of the Medical Society of London
(London, John Churchill, 1853)

- Smith T. Southwood- A Treatise on Fever (London, Longman, 1830)
- Sprigge S. Squire- The Life and Times of Thomas Wakley (London, Longmans and Green, 1897)
- Medicine and the Public (London, Heinemann, 1905)
- Stevenson T. "Water." in, Stevenson T. and S.F. Murphey, A Treatise on Hygiene and Public Health (London, Churchill, 1892), Vol. I
- Stevenson T. and Murphey S.F. A Treatise on Hygiene and Public Health, <Vols I-III> (London, Churchill, 1892)
- Sydenham Society, The New The New Sydenham's Society's Lexicon of Medicine and Allied Sciences (Based on Mayne's Lexicon.) (London, New Sydenham Society 1882)
- Sykes J.F.J. Public Health Problems (London, Scott, 1892)
- "Darwinism and Race Progress, A Criticism." in Public Health Vol. VI, 1893-1894
- "Public Health and Housing." in The Royal Statistical Society Journal, Vol. XIV, 1901

- Teale T. Pridgin- Dangers To Health. A Pictorial Guide to Sanitary Defects. (London, Churchill, 1879)
- Thudichum J.L.W. "Experimental Epicrisis of Some Late Researches on Liver Sugar." in the B.M.J., 1860, Vol. I
- Tomkin H. "Should the State Undertake Scientific Investigations into the Origin and Causes of Disease." in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. 9.
- University College
Hospital Medical School, Calendar, 1907-1908 (London.)
- University of London,
Middlesex Hospital Medical
School. Calendar, 1907-1908 (London)
- University of London,
Westminster Hospital
Medical School, Calendar, 1907-1908
- Vacher F. Defects in Plumbing and Drainage Work, (London, John Heywood, Manchester 1889)
- Vivian H. "Co-partnership in Housing in its Health Relationship." in The Journal of the Royal Institute of Public Health 1907, Vol. XVII
- Webb B. "The Minority Report in its Relation to Public Health and the Medical Profession." in Public Health, 1909-1910, Vol. 23.

- Webb B. "The Relation of the Poor Law Medical Relief to the Public Health Authorities." in, Public Health, Vol. 19, 1906-1907.
- Willoughby E. Handbook of Public Health and Demography. (London, Macmillan, 1893)
- Whitelegge A.B. "Notification of Infectious Diseases" in Public Health, Vol. I, 1888-1889.
- Hygiene and Public Health (London, Cassell, 1890)
- Whitelegge A.B. & Newman G. Hygiene and Public Health (London, Cassell, 1904)
- Wilson G. A Handbook of Hygiene (London, Churchill 1873, 1886, and 1892)
- Wright A. "On Woodridge's Method of Producing Immunity Against Anthrax by the Injection of Solutions of Tissue-Fibrinogen". in, Transactions of the Seventh International Congress of Hygiene and Demography, 1891, Vol. 2.
- "Should the State Undertake the Support of Laboratories for the Investigation of Disease?" in, Transactions of the Seventh International Congress of Hygiene and Demography, Vol. 9

SECONDARY SOURCES
Ackerknecht E.H.

"Hygiene in France, 1815-1848" ,
in The Bulletin of the History
of Medicine, 1948, Vol. 22.

"Anti-contagionism Between 1821-
1867.", in Bulletin of the History
of Medicine, Vol. XXII, 1948

Rudolf Virchow, Doctor, Statesman,
Anthropologist. (Madison, The
University of Wisconsin, 1953)

Agassi J.

Faraday as a Natural Philosopher
(London, Chicago, Chicago University
Press, 1971)

Aveling J.

English Midwives. Their History
and Their Prospects. (London, Elliot,
1967)

Ayers G.

State Hospitals and the Metropolitan
Asylums Board 1867-1930 (London,
Wellcome Trust, 1971)

Bahr P.H.Manson-&
Alcock A.

The Life and Work of Patrick
Manson (London, Cassell, 1927)

Baldry P.

The Battle Against Bacteria, A
Fresh Look. (Cambridge, Cambridge
University Press, 1976)

Bates D.G.

Thomas Sydenham: The Development
of His Thought 1666-1676 (Baltimore,
Johns Hopkins University, PhD Thesis,
1975)

Beatie S.

A Revolution in London Housing
L.C.C. Housing Architects and
Their Work, 1893-1914 (London,
G.L.C. Press, 1981)

- Berman M. Social Change and Scientific Organisation. The Royal Institution 1799-1844 (London, Heinemann Educational Books, 1978)
- Beveridge W.H. Power and Influence. An Autobiography (London, Hodder and Stoughton, 1953)
- Bloor D. "The Rise of the General Practitioners in the 19th-Century." in Journal of the Royal College of General Practice 1978, Vol. 28
- Boardman P. Patrick Geddes. Biologist, Town Planner, Re-Educator, Peace Warrior 1854-1932 (London, Routledge, Kegan and Paul, 1978)
- Brand J. "The Parish Doctor: England Poor Law Medical Officers and Medical Reform, 1870-1900." in Bulletin of the History of Medicine. Vol. 35, 1961
- Brand J. Doctors and the State. The British Medical Profession and Government Action in Public Health. (Baltimore, Johns Hopkins, 1965)
- Brockington C.F. Public Health in the 19th-Century (Edinburgh, Livingstone, 1965)
- Bruce M. The Comming of the Welfare State (London, Batsford, 1965)
- Bulloch W. History of Bacteriology (London, Oxford University Press, 1938)

- Bunbury H. (ed) Lloyd George's Ambulance Wagon
(London, Methuen, 1957)
- Burke P. Sociology and History (London,
George Allen and Unwin, 1980)
- Bynum W. "Darwin and the Doctors: Evolution
Diathesis and Germs in 19th-Century
Britain." in Gesnerus. Vol. 40
- Chadwick E. General Report on the Sanitary
Conditions of the Labouring Population
of Great Britain.1842 (Edinburgh,
Reprinted and Edited by M.W.Flinn,
at the Edinburgh University Press,
1965)
- Chave S. "The Medical Officer of Health,
1847-1974." in Proceedings of the
Royal Society of Medicine, Vol. 67
1974
- Chick H. (et al) War on Disease. A History of the Lister
Institute. (London, Andre Deutsch, 1971)
- Clarke P.F. Liberals and Social Democrats in
Britain in the Late Nineteenth
and Early Twentieth Century. (Camb-
ridge, Cambridge University Press,
1978)
- Clarke P.F. Lancashire and the New Liberalism
(Cambridge. Cambridge University
Press, 1971)
- Cole M. Beatrice Webb (London, Longmans,
Green and Co. 1945)
- The Story of Fabian Socialism
(London, Mecury, 1961)

- Colebrook L. Bibliography of Published Writings of Sir Almroth E. Wright. (London, Heinemann, 1952)
- Colebrook L. Almroth Wright. Provocative Doctor and Thinker. (London, Heinemann, Medical Books, 1954)
- Coleman W. Death is a Social Disease. Public Health and Political Economy in Early Industrial France. (Wisconsin, Wisconsin University Press, 1982)
- Collard P. The Development of Bacteriology (Cambridge, C.U.P. , 1976)
- Collini S.A. Liberalism and Sociology. L.T. Hobhouse and Political Argument in England, 1880 -1914, (Cambridge, Cambridge University Press, 1979)
- Cooke A.M. A History of The Royal College of Physicians of London. (Oxford, Clarendon Press, 1972)
- Cooke J.G. Michael Faraday (London, A.and C. Black, 1963)
- Cope Z. Almroth Wright, Founder of Modern Vaccine Therapy (London, Nelson, 1966)
- Cummins L. Tuberculosis in History (London, Balliere, Tindall and Cox.)
- Dewhurst K. Dr. Thomas Sydenham 1624-1689, His Life and Original Writings (London, Wellcome, 1966)

- Dictionary of National Biography Vols I-XXII and
Vols a - e. (London,
Smith and Elder ,1908;
Oxford University Press,
1959)
- Dingwall R. and Lewis P. The Sociology of the Professions
Lawyers, Doctors and Others (London,
Macmillan Press, 1983)
- Donegan J.B. Women and Men Midwives
(London, Greenwood, 1978)
- Donnison J. , Midwives and Medical Men
(London, Heinemann, 1977)
- Drabkin D.L. Thudichum, Chemist of the Brain.
(Philadelphia, University of
Pensilvania Press, 1958)
- Dwork D. The History of the Infant
Welfare Movement in England
1898-1918. (London, University
of London, PhD Thesis,1984)
- Dyos H.J. (ed) The Victorian City (London,
Routledge, Kegan and Paul, 1973,
Vols I and II)
- Emy H.V. Liberals, Radicals and Social
Politics 1892-1914 (Cambridge,
Cambridge University Press,
1973)
- Finer S.E. The Life and Times of Edwin
Chadwick. (London, Methuen,
1952)

- Fisher R.B. Joseph Lister, 1827-1912 (London,
Macdonald and Jane's, 1977)
- M. Flinn "The Medical Services Under the
New Poor-Law." in, D. Frazer,
The New Poor Law in the 19th-Century
(London, Macmillan, 1976)
- Foster W.D. A History of Medical Bacteriology and
Immunology (London, Heinemann Medical
Books, 1970)
- Francis H. "The Medical Officer of Health:
Myth or History?" in, Proceedings
of the Royal Society of Medicine,
Vol. 67, 1974
- Frazer D. The New Poor Law in the 19th-Century
(London, Macmillan, 1976)
- Urban Politics in Victorian England;
The Structure of Politics in Victorian
Cities. (London, Macmillan Press, 1979)
- Frazer W.M. A History of Public Health , 1834-1939
(London, Balliere, Tindall and Cox,
1950)
- Duncan of Liverpool (London, Hamilton
Medical Books, 1947)
- Friedson E. "The Theory of Professions: The
State of the Art." in Dingwall and
Lewis, (1983)
- French R. Anti-Vivisection and Medical Science in
Victorian Society. (London, Princeton,
1979)

- Galston I. Social and Historical Foundations of Modern Medicine. (New York, Brunner / Mazel 1981)
- Gauldie E. Cruel Habitations. A History of Working Class Housing, 1780-1918 (London, Allen and Unwin, 1974)
- Geison G.L. Sir Michael Foster and the Cambridge School of Physiology The Scientific Enterprise in Late Victorian Society (Princeton, Princeton University Press, 1978)
- Gerrans H.H. The Royal Institute of Public Health And Hygiene. (Pamphlet, London School of Hygiene and Tropical Medicine, London, 1950)
- Gilbert B.B. "Health Politics: The British Physical Deterioration Report of 1904." in Bulletin of the History of Medicine, 1965, Vol.39
- The Evolution of National Insurance in Great Britain. The Origins of the Welfare State. (London, Joseph, 1966)
- Gillispie C.C.(ed) Dictionary of Scientific Biography (New York, Charles Scribner's and Sons, 1970)
- Godlee R.J Lord Lister (Oxford, Clarendon Press, 1924)
- Goldman L. The Human Sciences and Philosophy (London, Johnathan Cape, 1969)

- Grigg J. Lloyd George: The Peoples Champion 1902-1911 (London, Eyre, Methuen, 1978)
- Hamilton M.A. Sidney and Beatrice Webb. (London, Sow, Marston, 1933)
- Harding A. Seymour- The Royal Institute of Public Health and Hygiene. (London, 1944)
- Hennock E.P. "Poverty and Social Theory in England: The Experience of the Eighteen Eighties." in, Social History Vol. I, 1976
- "The Origins of British National Insurance and the German Precedent". in W.J. Mommsen and W. Mock, (ed) The Emergence of the Welfare State in Britain and Germany 1850-1950 (London, Croom Helm, 1981)
- Hirst J.D. "A Failure Without Parallel. The School Medical Service and The London County Council.1907-1912." in Medical History 1981
- Hodgkinson R. "Poor Law Medical Officers of England." in Journal of Medical History, Vol. XI 1956
- The Origins of the National Health Service. The Medical Services of the New Poor Law. 1836-1871. (London, Wellcome Institute, 1967)
- Hole.W.V. The Housing of the Working Classes in Britain 1850-1965 (London, University of London PhD thesis, 1965)

- Holloway S.W.F "The Apothecaries Act 1815,
A Reinterpretation." in Medical
History, Vol. 10, 1966
- "Medical Education in England
1830- 1858. A Sociological
Analysis" in History, 1964,
Vol. 49
- Honnigsbaum F. The Division of British Medicine
(New York, St. Martins Press, 1979)
- Hughes E.C. "The Making of a Physician." in
Human Organisation, 1956, Vol. 14
- Jephson H The Sanitary Evolution of London
(London, Fisher and Unwin, 1907)
- Johnson M. "Professional Carreers and Biographies."
in Dingwall and Lewis, 1983.
- Kohler R.E. From Medical Chemistry to Biochemistry
(Cambridge, Cambridge University Press,
1982)
- Labisch A.(et al) "Recent Trends and Developments in the
Social History of Occupational Medicine
in the Federal Republic of Germany."
(Bremen,1983)
- Lambert R. Sir John Simon, 1816-1904 and
English Sanitary Administration.
(London, Macgibbon and Kee, 1963)
- Larkin P. Occupational Monopoly and Modern
Medicine (Tavistock, London and New
York, 1983)
- Lepine P. Elie Metchnikoff et Immunology
(Vichy 1966)

- Lewis R.A. Edwin Chadwick and the Public Health Movement (London, Longmans and Green 1952)
- Lloyd T.O. Empire to Welfare State (London, Oxford University Press 1979)
- Little E.M. History of the British Medical Association 1832-1932 (London, B.M.A. , 1933)
- Loew F.W. "Animal Experimentation" in the Bulletin of the History of Medicine, 1982, Vol. 56
- Longmate N. King Cholera. The Biography of a Disease (London, Hamish Hamilton, 1966)
- Lyle H.W. Kings and Some King's Men (London, Oxford University Press, 1935)
- Mackintosh A From Gladstone to Lloyd George (London, Hodder and Stoughton, 1921)
- Macleod K. Politics, Professionalisation and the Organisation of Scientists, 1917-1942 (University of Sussex, D.Phil Thesis, 1975)
- Macleod R.M. "Law Medicine and Public Opinion: The Resistance to Compulsory Health Legislation, 1870-1907", in Public Law, 1967.
- "The Frustration of State Medicine, 1880-1889." in Medical History, Vol. 11 1961

- Macleod R.M. "Changing Perspectives in the Social History of Science." in I.Speigal-Roesing and D.Sollar-Price, (eds) Science Technology and Society: A Cross-Disciplinary Perspective (London, Sage, 1977)
- "The Anatomy of State Medicine: Concept and Application." in, F.N.L. Poynter, (ed), Medicine and Science in the 1860s. (London, Wellcome Institute, 1968),
- Mackenzie D. Statistics in Britain 1865-1930. The Social Construction of Scientific Knowledge. (Edinburgh, Edinburgh University Press, 1981)
- Mearns A. The Bitter Cry of Outcast London. (London, Reprinted with an introduction by A.Wohl, Liecester University Press, 1970, first published , 1883)
- Melling J. Housing, Social Policy and The State (London, Croom Helm, 1980)
- Merrington W.R. University College Hospital and Its Medical School. (London, Heinemann, 1976)
- Metchnikoff O. Vie d'Elie Metchnikoff, 1845-1920. (Paris, 1920)
- Morgan N. The Development of Biochemistry in England Through Botony and The Brewing Industry 1840-1890 (London, University of London Thesis, PhD, 1982)

- Morgan N. "William Dobinson Halliburton, F.R.S. 1830- 1931." in Notes of the Royal Society of London. Vol. 38, 1983.
- "S.H.C. Martin, 1860-1924, F.R.S. Poisonous Proteins and Medical Biochemistry." Forthcomming article in Medical History, 1984.
- McBriar A.M. Fabian Socialism and English Politics 1884-1918. (Cambridge, Cambridge University Press, 1966)
- McHugh P. Prostitution and Victorian Social Reform. (London, Croom Helm, 1980)
- McKeown T. "A Sociological Approach to the History of Medicine." in Medical History, Vol. 14, 1970
- The Modern Rise of Population (London, Edward Arnold, 1976)
- McLachan G. & McKeown T. Medical History and Medical Care (London, Nuffield, Oxford University Press, 1952)
- Newman C. The Evolution of Medical Education in the 19th-Century (London, Oxford University Press, 1957)
- Newman G. The Rise of Preventive Medicine (The Heath Clark Lectures 1931) (London, Oxford University Press, 1932)
- Newsholme A. Fifty Years in Public Health: A Personal Narrative with Comments. The Years Preceding 1909. (London, Allen and Unwin, 1935)

- Newsholme A The Last Thirty Years in Public Health, Recollections and Reflections on My Official and Post Official Life.
(London, Allen and Unwin, 1936)
- Evolution of Preventive Medicine
(Baltimore, William and Wilkins, 1927)
- Novak S. "Professionalism and Bureaucracy: English Doctors and the Victorian Public Health Administration." in the Journal of Social History, 1973 Vol. 6,
- Olmsted J.M.C. Claude Bernard, Physiologist.
(London, Cassell, 1939)
- Owen D. The Government of London, 1855-1889
(London, Massachusetts, Harvard University Press, 1982)
- Paget S. (ed) Memoirs and Letters of Sir James Paget. (London, Longmans and Green, 1901)
- Sir Victor Horsley. A Study of His Life and Work. (London, Constable and Co. 1919)
- Parry N. & Parry J. The Rise of the Medical Profession
(London, Croom Helm, 1976)
- Parsons T. The Structure of Social Action
(New York, Free Press, 1968, first published, 1937)
- Parsons T.F.G. The History of St. Thomas's Hospital, Vol. III, 1880-1900
(London, Methuen, 1936)

- Pelling M. Cholera, Fever and English Medicine, 1825-1865. (London, Oxford University Press, 1978)
- "Medicine Since 1500." in P.Corsi and P. Weindling, Information Sources in the History of Science and Medicine. (London, Butterworth Scientific, 1983)
- Peterkin A. and Johnston W. Commissioned Officers in The Medical Services of the British Army 1660-1960 (London, Wellcome Institute, 1968)
- Peterson J. The Medical Profession in Mid-Victorian England. (London, University of California Press, 1978)
- Poynter F.N.L. (ed) The Evolution of Medical Education in Britain. (London, Pitman, 1966)
- "Education and the General Medical Council." in Poynter (ed) 1966.
- Razzell P. The Conquest of Smallpox (Sussex, Caliban Books, 1977)
- Richardson B. Ward Snow on Cholera (New York, Commonwealth Fund, 1936)
- Roebuck J. Urban Development in 19th-Century London (London, Philmore, 1979)
- Rolleston H.D. The Cambridge Medical School. A Biographical History (Cambridge, University Press, 1932)
- Rosen G. "Social Aspects of Jacob Henle's Medical Thought." in the Bulletin of the History of Medicine. Vol.V, 1937

- Rosen G. "What is Social Medicine?" in the Bulletin of the History of Medicine, Vol.XXI, 1947
- From Medical Police to Social Medicine. Essays on the History of Health Care. (New York, Science History Publications, 1974)
- Rosenbloom J. "An Appreciation of Henry Bence-Jones." in Annals of Medical History Vol. 2, 1919-1920.
- Rosenberg C. The Cholera Years(Chicago, London, University of Chicago Press, 1962)
- The Male Midwife and the Doctor (New York, Arno, 1974)
- Rowland J. The Mosquito Man. The Story of Sir Ronald Ross. (London, Lutterworth, 1958)
- Russell A.K. "Laying the Charges for the Landslide: The Revival of Liberal Party Organisation 1902-1905." in A.J.A. Morris, Edwardian Radicalism 1900-1914 (London, Routledge Kegan and Paul. 1974)
- Ryle J.A. Changing Disciplines, (London, Oxford University Press, 1948)
- "Social Pathology." in I.Galdston (ed) Social Medicine, (New York, the Commonwealth Fund, 1949)
- Sand R. Vers La Medicine Sociale (Paris, Bruxells, Balliere & DeSoer, 1948)

- Saunders A.M. Carr & Wilson P.A. The Professions (London, Oxford University Press, 1964, first published, 1933)
- Searle G.R. The Quest for National Efficiency A Study in British Politics and Political Thought, 1899-1974. (Oxford, Basil Blackwell, 1971)
- Shaw G.B, The Doctor's Dilemma (London, 1911)
- Shepherd J.A. Thomas Spencer-Wells, 1818-1890. The Life of A Victorian Surgeon. (Edinburgh and London, Livingstone, 1965)
- Sheppard F. London 1808-1870: The Infernal Wen. (London, Secker and Warburg, 1971)
- Shryock R.H. The Development of Modern Medicine. An Interpretation of the Social and Scientific Factors Involved. (London, University of Wisconsin, 1979)
- Sigerist H. "The Philosophy of Hygiene." in Bulletin of the Institute of the History of Medicine Vol. I, 1933
- Smith A.L. A Memoir of the Buchanan Family (Printed Privately at the Aberdeen University Press, 1941)
- Smith F.B. The Peoples Health 1830-1910 (London, Croom Helm, 1979)

- Stern B.J. Should We Be Vaccinated? A Survey of the Controversy and its Historical and Scientific Aspects. (London, Harper and Brothers, 1927)
- Stewart A. and Jenkins E. The Medical and Legal Aspects of Sanitary Reform. (Reprinted by Leicester University Press and edited by M.W.Flinn, 1969)
- Sudhoff K. "The Hygienic Idea and Its Manifestations in World History." in Annals of Medical History. 1917-1918, Vol. I
- Suttcliffe A. (ed) The Rise of Modern Urban Planning 1800-1914 (London, Mansell, 1980)
- Tait H.P. "Notes on the Scottish Branch of the Society of Medical Officers of Health." in Public Health, Vol. 90 1976.
- Tampke J. "Bismarck's Social Legislation a Genuine Breakthrough?" in W.J.Momsen and W. Mock (eds) The Emergence of the Welfare State in Britain and Germany 1850-1950 (London, Croom Helm, 1981)
- Tarn J.N. "Housing Reform and the Emergence of Town Planning in Britain Before 1914". in Suttcliffe, (1980)
- Temkin O. The Double Face of Janus (Baltimore, Johns Hopkins, 1977)
- Thompson H.Campbell The Story of Middlesex Hospital Medical School (London, Murray, 1935)

- Turner E.Grey and
Sutherland F.M. History of the British Medical Association (London, B.M.A., 1982)
- Turner J. Animals, Pain and Humanity in the Victorian Mind: Reckoning with the Beast.(London, and Baltimore The Johns Hopkins Press, 1980)
- University of London Historical Record, 1836-1912 (London, The University Press, Hodder and Staughton 1912)
- Vaughan P. Doctors Commons. A Short History of the British Medical Association. (London, Heinemann, 1959)
- Venn J.A. Alumini Cantabrigienses (London, Cambridge University Press, 1947)
- Virtanen R. Claude Bernard and His Place in the History of Ideas. (Lincon, University of Nebraska Press, 1960)
- Waddington I. "General Practitioners and Consultants in Early 19th-Century; The Sociology of an Intra-Professional Conflict." in, J.Woodward and D. Richards, Health and Popular Medicine in 19th-Century England (London, Croom Helm, 1977)
- Waksman S.A. The Conquest of Tuberculosis (London, Robert Hale, 1965)

- Webb S. and Webb B. The State and the Doctor
(London, Longmans, Green and Co. 1910)
- English Poor Law History
(London, Longmans, 1929, reprinted London, Cass, 1963)
- English Local Government;
Vol. 10, English Poor Law Policy. (London, Longmans, 1910, reprinted, London, Cass, 1963)
- Weber M. The Theory of Social and Economic Organisations. (New York, Free Press, 1964, Translated by T. Parsons.)
- Westacott E. A Century of Vivisection and And Anti-Vivisection. (Essex, Daniel, 1947)
- Wilkinson A. The Beginnings of Disease Control in London: The Work of Medical Officers in Three Parishes, 1856-1900. (Oxford, PhD, Thesis, 1980)
- Williams H. Requiem For a Great Killer. The Story of Tuberculosis
(London, Health Horizon, 1973)
- Williams H. A Century of Public Health in Britain 1832-1929 (London, A. and C. Black, 1932)
- Williams P.O. Carreers in Medicine
(London, Hodder and Stoughton 1952)

- Wohl A. "Unfit for Human Habitation."
in , H.J.Dyos, The Victorian City
(London, Routledge, Kegan and Paul, 1973)
- The Eternal Slum. Housing and
Social Policy in Victorian London.
(London, Edward Arnold, 1975)
- Endangered Lives: Public Health
in Victorian Britain. (London, Dent,
1983)
- Wolfenden R.C. "From Medical Officer of Health to
Community Physician, 1847-1974." in
Proceedings of the Royal Society of
Medicine. Vol. 67. 1974
- Wright P. and
Treacher A. (eds) The Problem of Medical Knowledge.
Examining the Social Construction of
Medicine. (Edinburgh, Edinburgh
University Press, 1982)